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Johannes Georgius Homme Drummond de Abbots Grange
Semper Prius

G-2-

THE

FRUIT-GARDENER.

CONTAINING THE

METHOD of Raiſing STOCKS,

For Multiplying of FRUIT-TREES,

By BUDDING, GRAFTING, &c.

AS ALSO,

DIRECTIONS

FOR

Laying out and Managing FRUIT-GARDENS.

To which is added,

The ART of Training Fruit-Trees to a Wall,

in a New, Eaſy, Expeditious, and Cheap Manner.

WITH

A DESCRIPTION of ſome of the beſt Kinds of FRUIT;

AND

The CHARACTERS of the TREES,

as to Growing and Bearing.

Being the Reſult of more than Twenty Years PRACTICE, OBSERVATION, and EXPERIENCE.

LONDON:
Printed for J. NOURSE, Bookſeller to His MAJESTY.
M DCC LXVIII.

Dec. 1912
27878

CONTENTS.

PREFACE, containing ſome particulars of the hiſtory of gardening

INTRODUCTION, containing ſome obſervations, and an account of authors works 1

BOOK FIRST.

CHAP. I.

Of the ſituations and ſoils that are fit for plantations of fruit-trees 17

CHAP. II.

Containing ſome general obſervations on the kinds of fruit-trees; and on the nature of the different kinds of ſtocks that are proper for each kind 21

CHAP. III.

Containing directions for the ſowing of the ſeeds that produce the different kinds of ſtocks, &c. 39

CHAP. IV.

Of ſuch ſtocks as are not raiſed from ſeeds, but to be obtained in different manners 44

CONTENTS.

CHAP. V.

Of the nurſery 49

CHAP. VI.

Containing the different methods of propagating all of the kinds of fruit-trees that the planter poſſeſſes 52

CHAP. VII.

Containing the manner of obtaining varieties, or rather of procuring new kinds of apple and pear-trees, &c. 60

CHAP. VIII.

Of budding 65

CHAP. IX.

Of ſeveral different methods of grafting. 78

BOOK SECOND.

INTRODUCTION 111

CHAP. I.

Of the fruit-garden, of walls in general, and of brick walls in particular, with the manner of faſtening trees to the walls 115

CHAP. II.

Of ſtone and lime-walls 121

CHAP. III.

Of training trees to a wall by means of wires 124

CONTENTS.

CHAP. IV.

Of wooden walls 129

CHAP. V.

Of mud walls 130

CHAP. VI.

Of walls made of reeds, baſket-work, &c. 131

CHAP. VII.

Of the different aſpects of walls 132

CHAP. VIII.

Of the height of fruit-walls 139

CHAP. IX.

Of the making, dreſſing, and keeping of borders for wall-trees. 141

CHAP. X.

Containing ſome directions with regard to the diſtances at which fruit-trees may be planted on walls. 144

CHAP. XI.

Containing ſome directions as to planting of wall trees 150

CHAP. XII.

Of the time and manner of heading down wall-trees after they have been ſome time planted 155

CHAP. XIII.

Containing ſome directions how to make a proper choice in purchaſing of fruit-trees 157

CHAP. XIV.

Of the proper time for planting of fruit-trees 160

CHAP. XV.

Treats of pruning and training of wall-trees 163

Deſcription of different Branches . . . . . 168.

CHAP.

CONTENTS.

CHAP. XVI.

Containing ſome particular directions for winter-pruning of wall-trees after one year's growth 175

CHAP. XVII.

Containing ſome directions for managing and ſummer-pruning of fruit-trees the ſecond year after planting 180

CHAP. XVIII.

Gives directions as to the method of winter-pruning after the ſecond year's growth 184

CHAP XIX.

Containing ſome obſervations which will explain the riſe and progreſs of the art of pruning wall-trees, &c. 193

CHAP. XX.

Of the ſeveral miſchiefs which befall wall-trees, with the manner of preventing and remedying them 205

CHAP. XXI.

Containing ſome directions for planting, pruning, and training of eſpaliers, or hedges of fruit-trees 210

CHAP. XXII.

Containing ſome account of dwarf-trees; what they are; how planted, pruned and reared 217

CHAP. XXIII.

Containing directions for planting and rearing of half-ſtandards, ſo as to render them ornamental and profitable in the fruit-garden 223

CHAP.

CONTENTS.

CHAP. XXIV.

Containing the method of labouring and dreſſing the fruit-borders for the benefit of the trees and the fruit 226

CHAP. XXV.

Of the miſchiefs which happen to ſuch fruit-trees as are planted in the open air in the fruit-garden, with their proper remedies. 231

Of orchards 240

BOOK THIRD.

CHAP I.

Of grapes 250

CHAP. II.

Of peaches 255

CHAP. III.

Of nectarines 262

CHAP. IV.

Of apricots 265

CHAP. V.

Of plums 269

CHAP. VI.

Of cherries 278

CHAP. VII.

Of geens 285

CHAP. VIII.

Of pears 287

CHAP. IX.

Of apples 341

CHAP. X.

Of quinces 360

CHAP. XI.

Of medlars 364

CHAP. XII.

Of fig-trees 369

CHAP.

CONTENTS.

CHAP. XIII.

Of the third claſs, or of nut-bearing trees in general, and of almonds in particular 371

CHAP. XIV.

Of walnut and cheſnut trees, with the fruit 373

CHAP. XV.

Of hazel-nuts 376

CHAP. XVI.

Of mulberries 378

CHAP. XVII.

Of gooſeberries 380

CHAP. XVIII.

Of currants 384

CHAP. XIX.

Of raſpberries 386

CHAP. XX.

Of ſtrawberries 387

CHAP. XXI.

Of the marks of ripeneſs; with the manner of gathering and preſerving fruit 392

PREFACE.

PREFACE.

AS it may poſſibly prove agreeable to ſome of my readers, before they come to the peruſal of the following treatiſe, to know a little of the ſtate of gardening among the ancients, particularly to ſuch who have neither time to ſpare for enquiring, nor opportunities of conſulting ſuch books as are neceſſary for purſuing the ſtudy of this ſubject; I ſhall therefore, for their ſakes, offer a few hints from the hiſtory of the gardens of ſuch nations as have been the moſt conſpicuous, in the moſt intereſting æras that are to be found in the hiſtories of mankind. But as the whole we have to communicate on the ſub-

ject is to be included within the bounds of a preface, it is only propoſed to take notice of the origin of fruit-gardens, and to make mention of a few particulars on the gardens of the ancients, chiefly with a view to the fruit-trees which they raiſed and cultivated. I ſhall, after finiſhing the above, offer ſome obſervations on modern gardening; particularly with regard to the improvements which have been made on fruit-gardens, as this is intended to be the ſubject of the preſent performance.

The firſt fruit-garden, of which we have any account in hiſtory, was that of Eden, as ancient as the creation of the world.

This garden was founded by the Author of nature for the reception of the firſt and beſt of human kind, while they were bleſſed with a divine reſemblance to their Creator, and happy in innocence.

It was beſtowed on them as the moſt proper reſidence for theſe god-like creatures. The fruits which the trees produced were given them for food; and the keeping and dreſſing of the garden, enjoined them for employment.

How happy might they have continued! How happy would their offſpring have been, had they perſiſted in their agreeable work, without having dared to diſobey the mandate of their Maker! But how fatal has curioſity often proved! The woman wandered from her mate, met the devil diſguiſed in the form of a ſerpent, parleyed with him, was deceived by his falſe reaſoning, eat the forbidden fruit, and perſuading her huſband to join in the crime that ſhe had committed, he incautiouſly conſented, and we were ruined. Vindictive heaven, for the violation of its command, expelled the guilty pair from their bleſſed abode

ſure, has informed us in Eccleſiaſtes as follows: *I made me great works, I builded me houſes, I planted me vineyards, I made me gardens and orchards, and I planted in them all kinds of fruit-trees; I made me pools of water, to water therewith the wood that bringeth forth trees.* Here is probably a miſtake in the tranſlation: ſhould it not rather be, *to water therewith the tree that bringeth forth fruit?*

In the earlieſt accounts that we meet with of gardens, after that of Eden and thoſe of Solomon, we find them adjoining to palaces; as that of Ahaſuerus, Eſther, c. i. ver. 5. where it is ſaid, *That a feaſt was held for ſeven days in the garden of the court of the king's palace.*

The fruit-garden of Alcinous, as deſcribed by Homer, was ſituated in the ſame manner. The deſcription of it from Mr. Pope's tranſlation muſt prove acceptable to every reader of taſte. See Odyſſey, b. vii. l. 141.

" Cloſe

" Cloſe to the gate a ſpatious garden lies,
" From ſtorms defended, and inclement ſkies;
" Four acres was the allotted ſpace of ground,
" Fenc'd with a green encloſure all around;
" Tall thriving trees confeſs'd the fruitful mould,
" The reddening apple ripens here to gold.
" Here the blue fig with luſcious juice o'erflows;
" With deeper red the full pomegranate glows.
" The branch here bends beneath the weighty pear,
" And verdant olives flouriſh round the year.
" The balmy ſpirit of the weſtern gale
" Eternal breathes on fruits untaught to fail:
" Each dropping pear a following pear ſupplies,
" On apples apples, figs on figs ariſe;
" The ſame mild ſeaſon gives the blooms to blow,
" The buds to harden, and the fruit to grow.
" Here order'd vines in equal ranks appear,
" With all th' united labours of the year," &c.

But we find that the fruit-garden of Laertes in Ithaca was at a diſtance from the royal palace, tho' probably adjoining to his own. To this he had retired in order to ſhun the noiſe and diſturbances of the licentious rivals for his daughter-in-law; for Ulyſſes, after having killed the rioting ſuitors of Penelope, finds his aged fa-

ther pruning a luxuriant tree, ignorant of what had happened at court, and of his arrival. Odyſſ. book xxiv.

" In this array the kingly gardener ſtood,
" And clear'd a plant encumber'd with its wood."

Ulyſſes thus accoſts his father, without diſcovering himſelf:

" Great is thy ſkill, O father! great thy toil,
" Thy careful hand is ſtampt on all the ſoil;
" Thy ſquadron'd vineyards well thy art declare;
" The olive green, blue fig, and pendent pear:
" And not one empty ſpot proclaims thy care,
" On every plant and tree thy care is ſhewn," &c.

Homer has made mention of baſons of water that were to be found in the gardens of Alcinous, and ſtreams every where diſperſed over the ſurface for watering of the fruit-trees.

The hanging-gardens of Babylon, raiſed as high as the walls by queen Semiramis, have been talked of with admiration in every age. Some authors have related that Amytys, who was

was queen of Nebuchadnezzar, much admired the mountains and woods of Media, and complained to her huſband that the plains of Babylon were diſagreeable to her from their uniformity; on which, by orders of the king, gardens were raiſed in his palace, in order to form ſome reſemblance of the Median mountains and woods. Theſe gardens conſiſted of different ſtages, which were raiſed behind and above one another; then they were filled with ſoil, in which was planted a variety of trees, that were watered from the river Euphrates, by means of pumps which raiſed the water to the ſeveral heights. See Herodotus, Quintus Curtius, Rollin, and others.

Xenophon on the education of Cyrus, informs us, that the Perſians were fond of gardening, and that they better underſtood the manner of planning gardens with elegance and beauty, than

than the Chaldeans. Lyſander, the Lacedæmonian general, much admired the garden of Cyrus the younger at Sardus, a city of Lydia near the foot of mount Imolus; he commended the neatneſs of the walks, the poſition of the trees, and the regularity of the quincunx. When he learned that the whole was laid out by Cyrus, and that the trees had been planted with his own hand, he cried out, that Cyrus was with juſtice extolled as the moſt happy prince in the world, ſince his virtue equalled his fortune.

The Lydians excelled in the art of gardening; they joined to the beauties of nature whatever could be added with propriety from the aſſiſtance of art.

Tiſſaphernes, who was governor of Lydia and Ionia, in the reign of Darius the Baſtard, is commended for having introduced into one of his gardens plenty of water, thickets that were refreſhed

refreſhed with continual breezes, beautiful grottos, green ſhady walks, and cool bowers. The reader will readily perceive, that the heat of the climate rendered the above very acceptable, and that they were introduced into ſuch gardens, on the principles of true taſte.

Let us now return to the Grecians, who are well known to the learned, by their having been great admirers of the beauties of nature in ſeveral ages. We find mention made in Homer of prieſts of Jupiter, called Selli, who ſpent their lives in rural retirement; and, by the deſcription which is given of their manner of living, they ſeem to have reſembled ſome modern religious orders of the church of Rome.

"Whoſe groves the Selli race auſtere ſurround,
"Their feet unwaſh'd, their ſlumbers on the ground." Hom. b. xvi. v. 234.

Theſe

Theſe prieſts made choice of the fruitful vales of Dodona for their abode, abounding, as Heſiod has deſcribed them, with every thing that could render life eaſy and happy. In later ages we find the Grecians not only poſſeſſed of private gardens, but alſo of public ones, to which the gay world reſorted for the pleaſures of walking and converſation; and to the ſocial intercourſe which was held in theſe and other public places, we may chiefly attribute the learning and politeneſs of the Greeks, and that public-ſpirited patriotiſm which ſo remarkably diſtinguiſhed the Athenians, on many occaſions, even among the inhabitants of the other Grecian ſtates.

Piſiſtratus and Cimon, ſo well known to us by their having been eminent among the Athenians for their great abilities as commanders, and their humanity and kindneſs as magiſtrates and citizens, gave an example of uncommon

common diſintereſtedneſs in laying open their fruit-gardens to the citizens of Athens, and permitting them, at all times, to take what fruit they pleaſed. See Atheneus, book xii.

The philoſophers in Athens, who by their diſcourſes greatly promoted virtue and politeneſs, inſtructed their ſcholars in gardens. Plato taught the divine truths of Socrates, and his own ſublime doctrines, in the Academy. Ariſtotle, in the Lyceum, inſtructed his ſcholars in nature, in arts, and in ſciences. Other philoſophers taught in gardens, ſhady arbours, or groves. Should any one diſapprove of their choice, let him only conſider, that ſcarcely could any more proper places be made choice of for inſtructing mankind in wiſdom and goodneſs, then the moſt agreeable ſcenes in nature.

Epicurus, who had ſtudied nature from his imaginary atoms upwards to the Divine Being, was convinced that

that mankind had been deſtined to happneſs by means of pleaſure; and that he might enforce his doctrines by every delightful circumſtance, he made choice of a garden as the fitteſt place for inſtructing his ſcholars in the manner how they might baniſh ſuperſtition and the fear of death from their minds, in order that they ſhould be able to acquire tranquility of ſoul; by which alone, according to the opinion of this philoſopher, pleaſures could be properly enjoyed, or real happineſs obtained.

The gardens of Epicurus were held in great eſteem among the Athenians long after his death; for we find it aſſerted, that they were kept in order at the expence of the public, and the care of them committed to one of the nobles; ſo important was the diſcharge of this office deemed.

In what manner the Grecian gardens, that were commonly frequented

ed by thoſe who lived in eaſe and affluence, were laid out; or with what kind of trees they were planted; cannot be eaſily determined; tho' it is highly probable that large walks were admitted into their plans; that they made choice of ſuch trees as formed the cloſeſt ſhades, made the fineſt appearance, and afforded the moſt agreeable proſpects. Pliny, in his Natural Hiſtory, has informed us, that the plane-tree *(platanus)* was a favourite tree with the Greeks, and often to be found in the gardens of Attica; and it is well known that the other nations of Greece formed their taſte in moſt of the pleaſing arts from the practice of the Athenians.

It is not certain that fruit-trees were planted in any of the public gardens at Athens, except thoſe that have been made mention of; yet it ſeems highly probable, that plantations of fruit-trees had not been unfrequent in Greece

Greece for a great while; for it is plainly proved by the writings of Ariſtotle and Theophraſtus, that the practices of grafting and inoculation were well known to the Greeks of their time; nor does either of theſe authors make mention of grafting and inoculation as a practice of late invention; and hardly can it be ſuppoſed, that theſe arts were employed to other purpoſes than multiplying of thoſe kinds of trees, whoſe fruits were generally liked.

If we turn our attention to Italy, during the happy æra of Roman liberty, we ſhall find a worthy example of the practice of gardening having prevailed among the nobles of Rome; for Publius Scipio Æmilianus, who was the adopted ſon of that humane Scipio who firſt conquered Spain, took New Carthage, beat Hannibal, and ſubjected the Carthaginians to the Roman public, having deſtroyed Carthage, and retired

retired from Rome to the country, we find him with his friend Lælius employed in grafting of fruit-trees, as well as in ſtudying of polite literature.

But notwithſtanding the practice of this eminent and good man, it is more than probable that gardening was far from being a general amuſement among the ancient Romans; for we know that they lived in great ſimplicity, little acquainted with any of the elegancies of life, till after the time that Sylla had taken Athens, Mummius had ſpoiled Corinth, and Greece had been conquered: then it was that a fondneſs for gardening aroſe among the Romans, after learning, politeneſs, arts, and ſciences, had made ſome progreſs in Italy. But not long after theſe great events, Lucullus, who had gained ſo many victories, and imported ſuch incredible wealth to Italy, and along with it cherry-trees from

Ceraſunte, a city in Pontus, lived with ſuch amazing ſplendor and luxury, as entirely corrupted that ſimplicity of taſte among the Romans, which might have proved favourable to gardening and the ſtudy of nature. The grandeur of his buildings, which were raiſed and finiſhed according to the elegant models of architecture that had been found among the Greeks, bewitched the Romans with the charming beauties of building; the finiſhed pieces of the Grecian painters, glowing with the fineſt colours, and exhibiting beauty and graces ſuperior to nature, would aſtoniſh the ſpectators; while finer proportions and more graceful attitudes in ſtatues than they had ever beheld in any human form, would raiſe their wonder and admiration.

Men in every age and nation have been fond of purchaſing whatever production of art they admired; and hence the Romans, after this period, were more

more likely to give encouragement to architects, to painters, or to ſtatuaries, than to planters. That this was really the caſe, is evident from the ſpeech of Cato, which has been recorded by Salluſt, in the hiſtory that he compoſed of Cataline's conſpiracy.

This great Roman, who admired and practiſed the ancient ſimplicity, appeals with great contempt to theſe innovators: *Sed per Deos immortales, vos ego appello, qui ſemper domos, villas, ſigna, tabulas veſtras pluris, quamre mpublicam feciſtis*; that is, "But in the name of the immortal Gods, I call on you! You! who have always valued your houſes, your country-ſeats, your ſtatues, and your pictures, more than the republic."

While the ſenators of Rome encouraged the Grecian arts, profeſſors of them would abound, and truly did ſo. Notwithſtanding that the ſeveral conqueſts had procured to the Romans

many unknown and delicious fruits from Perſia, Armenia, and other countries, yet it would prove in vain, ſhould I enquire after fruit-gardens among the Italian writers, while country-ſeats of Grecian architecture, that were furniſhed with pictures, and adorned with ſtatues, went under the name of garden *(hortus)*. Thus Juvenal, *Contentus fama, jacet Lucanus in hortis marmoreis*, Sat. vii. l. 79. "Content with fame now, Lucan lives at eaſe in marble gardens." Lucullus, of whom I have before made mention, poſſeſſed gardens which were regarded as the moſt expenſive things in the Roman empire, according to Plutarch: and Varro has informed us, that they were not remarkable for either flowers or fruits, but for paintings: *Hortos Lucullanos non floribus, fructibuſque, ſed tabulis fuiſſe inſignis.*

In the reign of Auguſtus, when the Roman glory was at its greateſt height; tho'

tho' the opulent who lived in luxury might diſregard plantations of fruit-trees, yet they were cultivated by thoſe who ſometimes reſided in the country, and ſtudied and admired nature. Let us conſult the works of the excellent poets of this age, which evidently prove that they were of this laſt claſs. The ſweetly plaintive Tibullus, when he is filled with the idea of his happineſs with the charming Delia, ſays,

Ipſe ſeram teneras matura tempore vites
Ruſticus, et facili grandia poma manu.

And his friend the elegant and polite Horace, after having recited the celebrated ſubjects of ſong, concludes with *uda mobilibus pomaria rivis*, as a ſubject excelling many of them. This recalls to our mind the deſcription of the manner of watering and moiſtening the fruit-trees that were

in the gardens of Alcinous. To favour this, orchards muſt have been planted in vallies in Italy as well as in Greece, otherwiſe the water could not have been conveyed in rivulets to the root of each of the trees, or ſo diſperſed over the ſurface, as to moiſten their heads by the aſcending vapour; both of which were, perhaps, believed to be neceſſary to their fruitfulneſs in ſuch warm climates as thoſe of Greece and Italy are well known to be. The ſame judicious author, in his ſecond Epode, which was written in praiſe of a country life, makes mention of fruit-trees as one of the moſt beautiful ſcenes in autumn; and is in raptures when he talks of the fruit of grafted pear-trees;

Vel cum decorum mitibus pomis caput
Autumnus arvis extulit,
Ut gaudet inſitiva decerpens pyra,
Certantem et uvam purpuræ, &c.

Virgil

Virgil, whoſe taſte and judgment has always been juſtly admired, has given us an elegant deſcription of a garden in which there are fruit-trees. See his fourth Georgic, from line 116 to 146. As his happy Corycian ſeems to have been well ſkilled in the practice of planting, I ſhall preſent my reader with part of the deſcription, as it is found tranſlated into Engliſh verſe by Mr. Warton.

" Tall were his limes and pines, and fruitful all his trees.
" Whatever buds the bending branches wore,
" So many fruit in autumn ſwell'd his ſtore.
" He too could high-grown elms tranſplant in rows,
" Or harden'd pear-trees from their place tranſpoſe;
" Or plums with all their fruit, or lofty planes,
" That ſhelter'd with broad leaves the quaffing ſwains.
" But ſince too narrow bounds my ſong confine,
" To future bards theſe ſubjects I reſign."

How favourable the ſoil and climate of Italy was to fruit-trees, we find in the ſame poet.

Poma quoque, ut primùm truncos ſenſêre valentes,
Et vires habuêre ſuas, ad ſidera raptim
Vi propriâ nituntur, opiſq; haud indiga noſtræ.

Were their grafted apple, pear, and plum-trees once planted, they needed no further care.

It is proper to take notice, that *poma* was a common appellation for the whole kinds of pippins and ſtone-fruit. The above is thus tranſlated by Warton, Georgic. ii. line 425.

" Thus when engrafted apples feel their ſtrength,
" Their trunks they ſtretch, and doubled is their length,
" While ſwift they dart into the lofty ſkies,
" Self-nouriſh'd ſtand, nor aſk from men ſupplies."

When we conſult the writers on agriculture who lived in Italy, we find that vines and olives were chiefly cultivated by the Romans, tho' they did not entirely neglect other kinds of fruit-trees.

Hiſtorians

Hiſtorians have informed us, that the emperor Nero had a fruit-garden near his golden palace, which was raiſed on the ruins of Rome.

Diocleſian, who preferred cultivating of coleworts to the ſharing the government of the Roman empire, muſt have been very fond of gardening in its meaneſt offices.

Having now enquired during the happy periods of liberty and grandeur in both Greece and Rome, I may ſuperſede any further purſuit of the ſubject till philoſophy enlighten human kind, and right reaſon conduct their reſearches into nature.

Ignorance and ſuperſtition have always proved obſtacles to the advancement of arts and ſciences; and yet, if we conſult the hiſtory of the ſucceſſors of Mahomet, who poſſeſſed many delightful countries, we ſhall find that they were fond of gardens; as alſo, that ſeveral of the Califfs were particularly

cularly curious in planting of both gardens and orchards; that their gardens not only contained all manner of fruit-trees, but aromatic plants and ſhrubs, and flowers of various kinds; that their gardens were plenteouſly watered with copious ſtreams, which refreſhed the trees, and ſupplied baths, reſervoirs, &c. according to the taſte of the owners.

The Arabs, who boaſted of being deſcended from Iſhmael the ſon of Abraham, were not only well acquainted with the hiſtory of Paradiſe, as it had been poſſeſſed by Adam and Eve in their ſtate of innocence, but were alſo filled with the hopes of eternal felicity in heaven above abounding in gardens that were inhabited by beautiful black-eyed girls, according to their great Prophet: and, as a fore-taſte of ſuch joys, gardens were found adjoining to every great man's palace, which were deſtined for the uſe of the ladies, and

in

in which the proprietors held dalliance with the fair. Theſe gardens, we may believe, were laid out and planted with a view to the pleaſures and conveniencies of the poſſeſſors: their plans would be finiſhed in conformity to their ideas of beauty. Some trees were probably deſtined to forming of opaque ſhades, where the incumbent foliage might prove impenetrable to the rays of the ſun; while other trees, after having long adorned the proſpect with beautiful fruits, afforded a variety of pleaſant and ſalutary food by their delicious produce; and while an almoſt endleſs variety of flowers adorned the ſcene, balmy odours exhaling filled the atmoſphere.

But with difficulty can the inhabitants of a cold northern climate form a proper idea of the rich productions of the pleaſant countries which the Mahometans poſſeſs. The fertility of their ground is amazing; and ſuch

fine fruits and aromatic balſams as they enjoyed, can only be produced in ſimilar ſoils, and in ſuch favourable climes. Here in North-Britain, and in almoſt every part of the iſland, great art is required to rear fruit-trees, and bring their productions to perfection: there, whatever is intruſted to the ſoil, with ſpontaneous vigour advances quickly to perfection, and bears plentifully. Here, with care and art we can ſcarcely obtain our end: there the fertile ſoil and favourable atmoſphere accompliſh their wiſhes. But why ſhould we regret the want of theſe advantages, when we ſecurely poſſeſs all the bleſſings of peace, the joys of religion, and the pleaſures of virtue! Liberty, ſupported by the beſt of kings, and careſſed by the freeſt people on earth, is the peculiar privilege, and forms the happineſs of true Britons.

When

When we look back to the times of old, Tamerlane, the conqueror of the Moguls and Tartars, was fond of gardening. It is reported of him, that he had a curious garden in the plain of Khani Cheul, near Samarkant, which conſiſted in parterres that were laid out in wilderneſſes and alleys bordered with ſycomores, and trees which bore the moſt delicious kinds of fruit. The garden was of a ſquare figure, and at each of the corners ſtood a lofty pavilion covered with porcelain, tinged with delicate ſhadowings, and ranged with admirable ſkill. The walls of each of theſe were painted with ſurpriſing art, exceeding every thing that had been ſeen in theſe dominions before the year 1397 of the Chriſtian æra: the whole was finiſhed in freſco.

The Eaſtern monarchs and princes have always had gardens adjoining to their palaces; and the inhabitants

in ſeveral of the great cities had ſo many gardens contiguous to their houſes, that when they were viewed at a diſtance, they appeared like large villages reared amidſt foreſts. Such are ſtill many of the cities in the Mungle dominions and the territories of the Chineſe, if we may credit the hiſtorians who have given us accounts of theſe countries, during the reign of Tamerlane, and for ſome centuries later down. What pity is it that the writers of the hiſtory of theſe charming countries were ſo little verſed in natural hiſtory, and have handed down to us ſo few particulars with regard to the natural hiſtory of the fruit-trees, and other plants; for ſuch information muſt have proved much more acceptable to intelligent readers than the horrid details of the cruel deſtruction of the human kind by butchering conquerors, who, blinded by ambition, ſubjected nations to the capricious power of inhuman tyrants.

I now return to Europe, where gloomy darkneſs long prevailed.

How dark with ignorance were thoſe periods, while the military government of the Romans and of other nations continued!

How gloomy the ſuperſtition of the church of Rome, that enſlaved the minds of human kind, till after the invention of printing, that the writings of the eminent authors of Greece and Rome were publiſhed and diſperſed! Then men began to read, to think, and to reaſon.

The Medici, a noble family of citizens at Florence, inſpired with reaſon, humanity, and a love of knowledge, gave an excellent example that had a happy influence on all around them. They had early imbibed a fondneſs for arts and ſciences: they not only excelled in all the above, but likewiſe encouraged men of genius and abilities: they were polite and ſocial;

cial; and as they were univerſally admired, we may readily believe, that they were generally imitated.

The ſpirit of the ancient Greeks and Romans ſeems to have reanimated the now happy Italians. Taſte and judgment are manifeſt in the poems of Vida: grace, elegance, and beauty, are viſible in the works of Raphael and Michael Angelo. Nature was the ſource from whence all the beauties and excellencies of the ancients had been drawn: the few ſurprizing geniuſes that now appeared, took ſeveral draughts of the ſame ſpring, which gave vigour and ſtrength to every one of their productions.

Monarchs were now aſhamed to be tyrants, and even popes were no longer able to domineer over conſciences. It was in the happy days of Leo the tenth, who had been elected pope when cardinal de Medicis, and inherited all the virtues of that illuſtrious

illuſtrious family, that a ſpirit of enquiry diſcovered itſelf in a variety of ſchiſms, which, tho' little commendable in moſt caſes, yet here ſerved to advance the improvement of reaſon, that by enlightening the underſtandings of mankind, diſſipated the darkneſs with which papal tyranny and ſuperſtitions had long involved the minds of a conſiderable part of the inhabitants of Europe. The ſcriptures were tranſlated and publiſhed; and mankind were charmed to find in the Bible, the beſt morality that was ever known, and as pure a religion as ever bleſſed the world.

Now Philoſophy began to ſhew ſome few rays of that light which directs our ſteps in purſuing the paths of nature, while Reaſon and Religion appeared openly: neither were all the deſtructive efforts of the Church able to ſtop their progreſs, tho' ſhe was armed with fire and faggots, and fa-

tal Cruelty accompanied her ſteps. Onward they came in ſpite of oppoſition, and we of the preſent age are bleſt with their preſence.

But whither am I wandering? While religion was univerſally ſtudied, every article warmly diſputed, and party-rage every where prevailing, minds infeſted with ſuch rancour as wrangling and perſecution induce, would be but ill fitted for the ſtudy of nature; and ſo far as we know, vegetable productions were generally overlooked.

Happily for us, in every age of the world ſome of mankind have preferred the pleaſures of retirement, to the joys of ſociety, and the contemplation of the works of nature to the gay buſtle of the giddy world. The adoration of the Divine Being has generally been the reaſon urged for their retreat. The places of abode which the hermits made choice of, were at a diſtance from the dwellings of the reſt of men;

fruits

fruits were commonly their food, and water their ordinary drink. Hence it is probable, that in places where there were no fruit-trees, or but few, the hermits would plant ſuch fruit-trees as could afford them the moſt agreeable nouriſhment, or might be able to produce the kinds of fruit that were moſt pleaſant to their taſtes. It is not likely that ever mankind would forget ſuch uſeful arts as thoſe of budding and grafting are; or neglect to put them in practice, when they could certainly, by means of them, multiply whatever trees of the kinds of fruit which they were fond of, even to the extent of their wiſhes. Beſides the above, thoſe who for the moſt part reſided in the country, would probably devote ſome of their time to planting of fruit-trees, that they might produce what was neceſſary to ſerve the demands of the family; and this part was, no doubt, often joined to the

cultivation of the grounds, and the raiſing of crops. From the progreſs of true religion it is apparent, that it muſt have inſpired a love of the Creator, which naturally turns the attention of every rational ſoul to the ſtudy of his works; and it is obvious to every enquirer, that ſkill and knowledge reſult from the practice of every art.

It may then be eſtabliſhed as a probability, that by means of hermits, peaſants, and others who were curious in fruit, the beſt kinds of fruit-trees have been handed down to us in an uninterrupted ſucceſſion, by the practice of grafting or budding.

The origin of fruit-gardens yet remains to be inquired into; and it may here be taken notice of as a matter of probability, that to ſome of the religious orders of the church of Rome we owe the firſt improvements in gardening as an art, by which trees were trained

trained into an elegant ſhape, with a double view to their beauty and bearing. The manner of living to which the monks were confined, favoured this. Men cut off from ſociety muſt have amuſements; and the grounds adjoining to the monaſteries being generally converted into gardens, ſome part of theſe was laid out in order to be planted with fruit-trees; the charge of which, as ſoon as the planting was finiſhed, was committed to one or more of the fraternity. And here we may naturally conclude, that in taking care of the fruit-trees, the monks would neceſſarily make obſervations. The good kinds of fruit-trees could not be propagated without grafting, or budding; the luxuriance of ſome trees would lay them under the neceſſity of pruning; the weakneſs and barrenneſs of others, would turn their attention to finding out proper remedies. The high walls by which the

gardens of the monaſteries were ſurrounded, would afford ſhelter to the neareſt-placed fruit-trees; and the extraordinary growth and good bearing of theſe, would probably induce the religious to make trial of fruit-trees trained to the wall, the ſucceſs of which would recommend the practice; for the extraordinary beauty, uncommon ſize, and quantity of fruit obtained, could not miſs to turn the attention of theſe recluſe gardeners to many uſeful circumſtances for conſtantly procuring like crops of fruit.

Le Gendre, who was curate of Henonville, is the firſt on record for having properly managed wall-trees, and for reforming the manner that prevailed in his time of ſhaping fruit-trees with the ſciſſars into figures that reſembled animals: he alſo firſt taught the method of pruning trees, in order that they might bear more and better fruit,

fruit, without doing violence to nature, as his monſter-making contemporaries had done (for he conſidered their artful-ſhaped trees as ſo many monſters). He likewiſe ſtudied dwarf-trees, and ſhewed by the ſucceſs of his practice, that an elegant ſhape was not inconſiſtent with good bearing.

But before I proceed with the hiſtory of thoſe who have excelled in this art, it is proper to take notice, that about one hundred years ago, men of genius began to turn their attention to nature, experiments were tried, obſervations were made, and many ways of inveſtigating the operations of nature were attempted; and, that greater ſucceſs might attend their labours, theſe enquirers formed themſelves into ſocieties, which monarchs encouraged and patronized, being ſincerely convinced of their great utility. Nor were they diſappointed in their expectations; for the united endeavours of theſe candid

aſſociates, ſoon diſſipated many of the prejudices of former ages, and communicated ſuch knowledge as did then, and ever muſt ſtand the teſt of reaſon.

True natural philoſophy firſt made its appearance in Britain; but gardening, and particularly that kind of it which I am about to treat on, took its riſe, and was brought near to perfection in France. There a great king and able miniſter gave proper encouragement to men of abilities; and while Le Notre was improving the planning of gardens, Quintinye, attentive to the practice, was collecting and managing the beſt kinds of fruit-trees, diſpoſing them to the greateſt advantage, and forming them into the moſt agreeable figures. The reſult of his experience he has fairly and honeſtly communicated his precepts are in general good; and his inventions in pruning of the greateſt utility. To

this

this able gardener was owing the well-regulated gardens in France, and on the continent, at a time when our anceſtors were ſtrangers to the art.

William prince of Orange was introduced to England, and got poſſeſſion of the crown by a revolution which gave great joy to the Engliſh, as they obtained many conceſſions from this monarch, which their great patriots had in vain contended for in former reigns. By king William's orders the gardens of Kenſington were formed with taſte, generally admired, and ſoon after imitated by the nobility and gentry of Great-Britain: and from this time many gardens were laid out, and planted with judgment in ſeveral parts of Britain.

It may here with great propriety be obſerved, that were our ſoil and climate in Great-Britain equally favourable as they are found to be in other countries, the Britiſh would excel other

nations

nations in gardening, as well as they do in many uſeful arts; for ſuch is the ingenuity of the inhabitants of this iſland who have turned their attention to fruit-trees, that in ſpite of the extremities of cold, and ſudden changes of weather, to which we are ſubjected in ſeveral unfavourable ſeaſons, we often enjoy ſome of the beſt kinds of fruit in their higheſt perfection; and new improvements are ſtill making from time to time.

That my reader may be able to form ſome idea of the different kinds of gardening that are to be found in Europe, I now return to obſerve, that though mankind are naturally prompted by a love of knowledge to enquire into the works of nature, yet it is with different views, and to different ends. Vegetables have been the ſtudy of the botaniſts; and the end they have purſued, has been to find them out in the ſtate of nature, and

to

to deſcribe them in ſuch a manner as might diſtinguiſh them from one another, and aſcertain the kinds whenever they ſhould be found: but the near affinity in the eſſential parts of many different kinds, ſoon diſcovered the uncertainty of this method. Hence, in order to reduce the knowledge of vegetables to a certain ſcience, various methods have been propoſed, claſſes have been appointed, orders inſtituted, genuſes formed, and ſpecies determined.

The flowers and ſeeds have been found to be the leaſt variable parts of plants growing wild; for this reaſon, they have been of the greateſt uſe to authors, in founding their ſeveral ſyſtems of botany.

Though we obſerve uniformity in the productions of nature, yet ſhe may be made to deviate from her ordinary courſe, in the ſize, ſhape, colour,

colour, or other properties of her productions. The floriſts who were prone to the admiration of flowers, raiſed them from the ſeed; and after they had tranſplanted them into a variety of ſoils, they cultivated them in different manners; and firmly believed, from what they had found in experience, that the flowers might be greatly varied in their figures, in their ſize, and in their colours. Some flowers of the ſame kind appeared much more beautiful to them than others; on which they formed their ideas of beauty from the appearance which thoſe made that they liked beſt. This we may conſider as the firſt attempts of the floriſt towards forming of taſte; but ſince that time the ſeveral kinds have been ſubjected to certain rules, which have been laid down by this ſpecies of virtuoſos, in order to direct the judgment of thoſe who would chuſe to make proficiency in the ſtudy of flowers.

Certain

Certain proportions have been declared to be eſſential to the beauty of each particular kind of flowers; and whatever flowers of the kind are wanting in theſe, are rejected with contempt.

Here then is an art that confounds the botaniſt; for it is founded on fancy, and its object is the production of artificial beauties, that take their riſe from favouring the powers of nature by means of compoſts, culture, and ſituation. Suppoſe now that a young curious botaniſt with his friend are travelling in queſt of knowledge. They enter into a flower-garden at Haarlem. Both are ſtruck with the new and gay appearance. The botaniſt directly flatters himſelf with the finding of ſome new plant, conſtituting a genus, and calling it by his own name.

They ſee the maſter leaning in raptures over Madam Pompadour;

ſoon after they regard him while he is in extacies with the Diadem of Flora; and accoſt him when he is in tranſports with the Glory of the World.

B. You are very attentive, maſter?

Fl. No wonder, Sir; I am admiring the Glory of the World.

B. It is but a fleeting phantom: let us examine the new plants that you have got.

Fl. Plants, Sir! Do you imagine that you are in a kitchen-garden or a wilderneſs? There are no plants here. This is a flower-garden; and I may ſay it without vanity, contains as fine flowers as any that are to be found in Europe.

B. Show me the flower: it is by means of that I ſhall be able to conſtitute a new genus.

Fl. Ye are kindly welcome, gentlemen, to admire the flowers; do but conſider their properties; obſerve how charming the colours are, and how finely

finely they are contraſted! Could any of our beſt painters ſhew ſuch colouring in their works, or give light and ſhade to that ſurprizing beauty which appears in many flowers of my rearing, they would have juſt reaſon to boaſt of their ſkill. I have raiſed flowers for forty years and more; many a thouſand guilders have I got from England for flowers; yet never have I beheld any one in ſuperlative beauty come near to *Gloria Mundi*.

Theſe laſt words awakened the botaniſt from his delirium, and convinced him that the floriſt was really frantic. He tipt the wink to his friend, who interpoſing told the floriſt, who ſtill continued to harangue, that his flower well deſerved its name.

They run through his garden with little attention. The floriſt ſtops them at Madam Pompadour, recommends her to their conſideration as a perfect beauty, while the botaniſt regards her

as an overgrown monſter. They then hurry away, wondering that any of mankind ſhould be delighted with the monſtrous productions of nature; he convinced of their ſtupidity, who were ſo inſenſible to the charms of beauty.

Suppoſe now that the love of variety leads this pair of friends to a kitchen-garden. There they find that culture has been employed with a view to the obtaining of food; and that the induſtry and art of the gardener has ſo far changed plants, their roots, and ſeeds, in their appearance, that they have almoſt loſt their reſemblance to thoſe particular parts in the original genuſes, as they were found by them in the botanic garden. The botaniſt enquires after the names of ſeveral kinds, and is informed of an almoſt endleſs variety: he then takes the genus to which they belong; turns over the whole ſpecies

to

to no purpoſe; not one of the kinds is to be found in the book of the accurate Linnæus. On this, the botaniſt begins to doubt of the uſefulneſs of this art, and is almoſt tempted to renounce it as imperfect.

The friends hearing of a fruit-garden, go to ſee it. The owner accompanies them through the ſeveral walks. The botaniſt commends the regularity of the garden, and uniform ſhape of the trees. He enquires whence the gentleman had thoſe trees, that ſo nearly reſemble one another in their figure and ſize. He takes notice, that the row of trees which are placed on the right hand, the row that is found on the left hand, and the tree on the wall which is oppoſite to the walk, are all of the ſame genus, though they differ in ſpecies.

Gent. Sir, they are all three different genuſes: the firſt are peals; the ſecond are apples; and the tree

before you is a quince. Do but look at them by turns, and you'll diſcover the difference. View the colour and figure of the fruit; theſe will diſtinguiſh them; and if you are ſtill in doubt, taſte ſome of the fruit of each kind: and after ſome ſuch trials, compare them together in order to form a right judgment, and the reſult of this will put their real differences beyond a poſſibility of doubting.

B. Mr. Linnæus, who is univerſally acknowledged to be the greateſt botaniſt of the preſent age, has conjoined theſe and ſeveral other genera, which Tournefort had conſtituted into ſeveral diſtinct kinds. This author, more attentive to the chives and piſtils which are found in the flowers of plants, than any of the preceding botaniſts had been, has appointed new claſſes, and conſtituted genuſes with certainty: he has alſo been particularly accurate

accurate in the ſpecies: and as the whole of his knowledge has been taken from obſervations, he is likely to be univerſally followed as the beſt pattern; for he has exhibited a new and complete ſcience of botany, to the real improvement of the art.

G. I was well acquainted with Sir Charles Linnæus's ingenious and accurate ſyſtem of botany, even ſome time before it was badly tranſlated and publiſhed by —— ——, as his own performance. I muſt approve of that author's method, tho' it is not natural, as he himſelf has candidly acknowledged. But tho' fruit-trees may very properly be ranged in botany by the ſimilitude of the flowers, yet, as the fruits are the precious rewards of the planter's care, genuſes that are formed from any thing elſe beſides theſe, muſt appear to him to be very ill founded. Tournefort was convinced of this truth, and continued

the genera of antiquity, which are evidently founded in nature, as preferable to any artificial ones that could be ſubſtituted in their place. Neither has he diſcovered leſs knowledge in his doctrine of the ſpecies; for the ſpecies that he has given are a deſcription of the particular fruit, as they appeared to him, and a careful examination of their ſeveral properties; and he has illuſtrated them by frequent compariſons. And this is, perhaps, the moſt uſeful manner that can be fallen upon for inſtructing of the planter, who pretends not to ſtudy nature in her caſual productions, but to poſſeſs and propagate the trees that produce the moſt delicious kinds of fruit in the manner of his art.

B. I believe, Sir, you will find that the art and ſcience of botany includes every vegetable production that has been as yet diſcovered. To be convinced of this, the Engliſh reader

reader needs only to conſult Linnæus, in D— H—'s Hiſtory of Plants.

G. Botany is the knowledge of vegetables, as they are found in the ſtate of nature ſpringing and growing up to perfection unaſſiſted by culture; but the knowledge of flowers, of the productions of the kitchen-garden, and of fruit, is entirely different. It is true, that they are all natural productions; but they are varied by the aſſiſtance of art; and even Linnæus himſelf, conſcious of the differences that reſult from this, calls them varieties, and does not regard them as particular ſpecies or objects of his art. Each of the above ſtudies is a ſeparate ſcience, independent of the others, and founded on its own principles, which every one muſt ſtudy who inclines to underſtand any of the above arts; for they ought ever to be kept diſtinct; and the joining of them together muſt produce a con-

fuſed medley, quite unintelligible to thoſe who are not well ſkilled in each: and I have often heard gentlemen complain, that the laſt edition of the Gardeners Dictionary is ſuch as is deſcribed.

You were pleaſed, Sir, to take notice of the regularity of my garden, and the uniform ſhape of the fruit-trees: this is the reſult of art. In this garden you may ſee all kinds of gardens that I have been making mention of: each of theſe muſt be managed with ſkill. Are my flowers neglected for a very ſhort time? the caſual poſſeſſors of the ſoil ſoon oppreſs them. Are my fruit-trees left to themſelves for the growing ſeaſon? a wild luxuriance ſpoils their ſhape, and hurts their future bearing. Kitchen things without careful cultivation come to little. Even parterres without frequent dreſſing put on a diſagreeable appearance.

After

After all, gardening may be defined to be, the art of making nature act conformed to our ideas of beauty, or in ſuch a manner as to promote our purpoſes; for though nature may with great propriety be ſaid to be undocile, yet art may prevent her acting in oppoſition to our views, by timeouſly ſtopping her progreſs and reſtraining her efforts; or by indulging them, when they evidently tend to the perfection of our plans. I might, in this place, ſay ſomething of deſign in gardening: I might deſcribe the gardens in Italy, or thoſe of Turkey in Europe: I might commend the Chineſe gardens, as ſuperior to the European. With regard to deſign in gardening, I ſhall only obſerve, that our gardens ought to admit as many natural beauties as poſſible: that it is the buſineſs of art to ſhew theſe to the beſt advantage: and that an eaſy elegance ſhould be conſpicuous every where.

It

It would contribute little to advancing of the knowledge of fruit-gardens in Great-Britain, tho' I ſhould purpoſely ſtudy the Italian and Turkiſh gardens; for the pure and temperate air that nouriſhes and brings to perfection the delicious fruit in theſe favoured climes, is wanting in our iſland: and as to the Chineſe gardens, that are ſo highly commended in the elegant and ingenious Elements of Criticiſm, it is probable that the author who compoſed what we there find on gardening, formed his judgment of them from a late publication, which may rather be conſidered as maps of a country than plans of gardens. See *Lettres Edifiantes et Curieuſes*, tom. x. p. 416.

Lewis le Comtés, a ſenſible writer, who reſided ſome years in China with the emperor at Pekin, gives us a very different account of the Chineſe gardens. His words are in the Engliſh tranſ-

tranſlation, " They are very negligent as to their gardens: they have, in that reſpect, very different conceptions from ours; for except places deſigned for the burying-places of their anceſtors, which they leave untilled, they would think themſelves out of their wits to put the ground to no other uſe than to make alleys and walks, and to plant groves of unprofitable trees." The natural plains and copious waterings that are to be found every where in China, are wanting in Britain: in vain would it prove ſhould we attempt to imitate them, as the inequality of the ſurface of the ground would, in many ſituations, prove an inſurmountable obſtacle. An artificial rock muſt have a fine effect in a Chineſe garden that is laid out in a perfect plain: any thing of that kind in moſt parts of Britain would appear ridiculous. How diminutive muſt every thing look

that

that art can produce, when compared with our natural rocks!

In the province of Holland an artificial mount is greatly admired, and is to be found in many gardens. How little would ſuch an object look in the neighbourhood of lofty hills, were we to imitate the Dutch in the gardens of North-Britain!

Gentlemen of taſte will eaſily perceive, that by imitating the manner of our neighbours on the continent, we ſhall beſt ſucceed in managing of our gardens: their ſoil and climate nearly reſemble our own. Let us then conſider the particulars in which each nation excels. In travelling thro' France, when we are in their gardens we are greatly pleaſed with the fine-ſhaped fruit-trees, the charming ſtatues, modern as well as ancient, the menageries, or collections of beaſts, birds, inſects, &c. the grandeur and propriety of the plants. Every where

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art ſeems to vie with nature, while both exhibit in the moſt agreeable manner their ſeveral beauties.

In Brabant, tho' the climate and ſoil favour gardening, yet ſuperſtition prevents the inhabitants from profiting by the bounty of nature.

In Holland the happy influences of liberty are evident; and tho' neither climate nor ſoil is ſo favourable as in Flanders, yet the conſtant application of this ſober and induſtrious nation, has made them far excel their neighbours in pleaſure-gardens. By them flowers and flowering ſhrubs are cultivated to great perfection. The walks in their gardens are laid out with taſte, and ornamented with the fineſt pebbles and moſt beautiful ſhells. Facing the water are found grotto's, finiſhed in a very artful manner. Theſe delight the ſight with a ſurprizing variety of natural and artificial colours, that are ranged with propriety and elegance. In every particular part we diſcern

cern beauty; but when we attend to its connection with the other parts, we diſcover deſign, and find that every part conſpires to make a complete piece.

In many of them we admire the ingenuity of the deſign, and applaud the artful manner of the execution.

In Great-Britain, where we enjoy liberty, the beſt of bleſſings, under the auſpices of a beneficent monarch, who renders that of Britain the happieſt government on earth, we have improved whatever excellence is to be found among other nations. Several private perſons in this iſland have exceeded the French in their grand manner, and excelled the Dutch in the beauty and elegance of pleaſure-gardens. We can with juſtice boaſt of flowers and fruit of our own raiſing, equal, if not ſuperior, in beauty and goodneſs to thoſe of any other nation whoſe ſituation is ſimilar to our own.

Good ſenſe and ſound judgment, which have been acknowledged to be

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the characteriſtic of Britons by ſeveral eminent foreign writers, muſt give them a ſuperiority to other people in taſte, as well as what they poſſeſs in arts; and particularly in the ſolid parts of ſciences.

Gardening has ever been the favourite amuſement of the wiſeſt and beſt of mankind. A garden was the reſidence of innocence and virtue ſoon after the creation; it is at preſent the choce of the good and wiſe: nor need this ſurpriſe us. What place ſo friendly to ſtudy, and the contemplation of the works of nature! What place ſo proper for acquiring the knowledge of the Divine Being, as the ſcenes of nature, where his bounty, goodneſs, and wiſdom, ſhine forth conſpicuouſly! The farther advances that we make in the knowledge of nature, the more will our ſouls be filled with love and gratitude to its divine Author. Suppoſe now, that the ſoul is replete with theſe tranſporting paſſions, what place can be

be found ſo proper for diſſipating the fervour of devotion, or indulging the nobleſt of all enthuſiaſms, as the retirement of a garden? Have we been ſucceſsful in purſuit of riches, or trod the paths of ambition favoured by fortune? many great men rich in wealth and high in honour have made choice of a garden as a ſecure retreat, where they in eaſe and tranquility have ſpent the remains of life, till the debt of nature was demanded and paid.

Are we delighted with the pleaſures of friendſhip, where can we enjoy our friends better than in ſharing with them the delicious fruit of our labour, in agreeable ſcenes of our own forming?

Leſt the reader ſhould accuſe me of indulging my fancy at his expence, I ſhall conclude this article by obſerving, that if we conſult the hiſtory of human kind, we ſhall find that gardens have been the pleaſurable ſcenes of joy and happineſs throughout eve-

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ry age and among all nations: and from what has been collected in the preceding part of this preface, it clearly appears, that the advancing of reason, and the improvings of the understandings of men, have always promoted the art of gardening.

The subject of the following treatise is fruit-trees; the manner of raising, of multiplying, and managing them, according to the methods which the different artists have directed. The reader will find in it something new, and several things useful. To free the subject from many absurdities of both moderns and ancients, and to deliver instruction in a plain and intelligible manner, has been the aim of the author. To have laboured the language, would have rendered it more agreeable to men of learning, but less useful to the generality of readers. The writer owns that he has profited by the works of several authors; yet he has copied from none, unless when

warranted by experience he believed himſelf certain of the facts. Where he doubted, he has added the author, that the reader may be able to judge of his veracity. In the multiplicity of books that are to be found written on the ſubject, there is much need of abridgements. He has freely borrowed from the works of the ancients, and taken ſeveral things from the obſervations of the moderns. Whatever is to be found in the books of either, that is taken from nature, well merits our attention. He has preferred the obſervations of ſome authors to thoſe of others, on finding that they were accurate, and that the authors of them had ſtudied the operations of nature with greater attention. He has added to the art of managing a fruit garden ſome things on this ſcience, as he is firmly perſuaded that theſe muſt prove acceptable to the intelligent.

What he demands of the reader, is, that he will be at pains to underſtand

every thing before he attempts to criticiſe it. Thoſe who have practiſed the ſeveral parts, will be beſt able to judge of the propriety and uſefulneſs of the directions that are given. Should the peruſal of this treatiſe afford as much pleaſure to the reader, as the practice of the ſeveral parts has given the author, he will be well ſatisfied with the book.

Before an end is put to this preface, it is proper to take notice of the work of an author, who has been of late followed by ſome planters in the managing of their wall-trees; probably, on account of the novelty of his method of pruning and training of trees to a wall. I have ſeen it put in practice, and it ſucceeds very well with cherry-trees, and ſome kinds of plum-trees, for a few years, when his directions are followed with care and attention. But his method does too much violence to nature; neither is it practicable on old trees. His management of peach-trees muſt appear to the reader to be entirely whimſical, and every attempt to

follow it cloſely would, probably, prove unſucceſsful: nor is this aſſertion made without ſeveral obſervations to ſupport it. However, after all, was his method practicable; yet I'll venture to affirm, that one half dozen of trees may be eaſier managed on a wall in the manner that is here directed, than a ſingle one in the way of Mr. Hitt. To ſuch, indeed, as have little to do, it will afford ſome buſineſs: but as it is new in part, and contains ſome ingenious obſervations, the author deſerves praiſe for its publication.

The truly curious planters will, no doubt, try every method that they find recommended from experience; and the attentive obſerver of nature will ſoon be able to judge from his own obſervations, which is to be preferred. Whatever method is eaſily put in practice, ſuppoſe the ſucceſs equal, will be followed by the judicious.

Moſt authors views are partial, and their judgments confined to a few particulars.

ticulars. The prejudices of the moderns are as ſilly, and ſeveral of them as hurtful to arts and ſciences as thoſe of the ancients. I might give many inſtances in ſupport of the above aſſertion from the works of both; but it gives me more pleaſure to commend than blame: and was nature ſo complying as to puſh branches preciſely as Mr. Hitt inclines, his method muſt prove excellent, but would require very high walls. However, Nature, regardleſs of our wiſhes, will make her efforts in her uſual manner; and if theſe are not timeouſly put a ſtop to, her progreſs will ruin our deſign. Mr. Hitt's indulgence to her in the growing ſeaſon, muſt ſpoil the figure of the tree, and hurt its bearing. Had he underſtood the advantages of pinching and ſummer pruning, he would certainly have adopted them into his method: but his indulging an uſeleſs growth of wood through the ſummer, in order to ſtrengthen flower-buds, is proceeding

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on a falſe theory. Here ſtop ſhort. Gentle Reader, practiſe, obſerve, and reaſon; judge for yourſelf; many things ſtill remain undiſcovered, notwithſtanding the ingenious obſervations of preceding authors, who have laboured to good purpoſe in this province.

Felix qui potuit rerum cognoſcere cauſas. Virg.

Perhaps ſome lucky enquirer may obtain the felicity reſulting from the diſcovery of the cauſes of things; and if ever this happens, it muſt be owing to accurate obſervations and ſound reaſoning. The writer of the preſent work has endeavoured to diſplay both in the courſe of his directions: if he has been ſucceſsful, let the reader determine without prejudices. The writer of any work muſt be impartial, or he can never be judicious.

INTRO-

INTRODUCTION.

AS gentlemen of ample fortunes often chuſe to reſide in the country, if to their other amuſements, they ſhould add the planting and dreſſing of fruit-trees, it would ſoon prove an agreeable recreation; and many reaſons may be urged for their beginning the practice. Are they delighted with the proſpect of flowers? Every kind of fruit-tree ſeems to contend in ſpring, who ſhall beſt entertain the poſſeſſor with the beauty of their bloſſoms. Mankind are always happy with the proſpect of plenty; in no other ſcene is it exhibited with ſuch charming variety, as in the fruit-garden and orchard. Are gentlemen fond of indulging their taſtes? Nature, from the plentiful productions of the above, regales them with a variety of the fineſt flavours and exalted reliſhes. To cool us in the heat of ſummer, ſhe copiouſly unites the acid to an agreeable ſweetneſs. In her preparations for autumn, ſhe adds to a

profuſion of ſweets, the moſt invigorating combinations of the principles; and while we conſume her gifts, we pleaſe our palates with delicacies, and regain our healths by means of the moſt ſalutary juices. Nor does her goodneſs end here; for the fineſt preparations of all in the ſeveral kinds of fruit, are reſerved till they acquire ripeneſs in winter and ſpring, and may be ſo contrived as to entertain us elegantly in an uninterrupted ſucceſſion, even till the return of ſummer-fruits in the following ſeaſon.

I now come to talk more in character; and ſhall obſerve, that fruit are not only pleaſing to moſt people's taſte, but alſo afford excellent nouriſhment, when they are uſed as food. In many diſeaſes we find them to be very efficacious medicines. I ſhall give but a few inſtances, as I hope theſe will prove ſatisfactory. In fevers, what mixtures are more effectual to allay the thirſt, diminiſh the heat, and remove obſtructions, than their acid, balſamic, and ſaponaceous juices? What ſubſtances are more proper to reſiſt putrefaction, than many kinds of fruit? In chronical diſeaſes, or ſuch ailments as are of long continuance,

where ſhall we find medicines that are fitter for thinning the viſcid humours, and for removing of morbid obſtructions, that are often the cauſes of theſe diſorders? In the languors of ſickneſs, where is the cordial that in its efficacy exceeds generous wine? In dangerous weakneſſes, nothing is found to be more ſtrengthening. Even the ſmell of ſome kinds of fruit, is chearing and refreſhing to the ſick. The intelligent phyſician may find in fruits almoſt every kind of medicine; ſuch as pectorals, ſtomachics, diuretics, ſudorifics, &c. But leaving this ſubject to be further carried on by phyſicians, I ſhall offer a few obſervations to be conſidered by my reader.

The farmer, by raiſing of fruit-trees, will at length find, that their produce heightens the pleaſure of his meals, and increaſes the profit of his grounds.

In the places, even of Scotland, where orchards have hitherto ſucceeded, the ſales of the fruit have as yet been certain. Were the fruit that are produced in this country, in ſuch quantities as to enable the planter to make cyder, or perry, as is done in England, a great return for the crop might ſurely be depended on, as theſe liquors

bring a high price, and are very ſaleable.

The Engliſh and Iriſh have greatly encreaſed the value of their farms, by making plantations of fruit-trees, in many different places both in England and Ireland. Why may not the Scotch profit by following their examples? Country gentlemen, even in North Britain, on making a trial, will find planting and training of fruit-trees an agreeable amuſement; and in favourable ſituations and ſoils, they will find, that no improvement which they can make, is likely to turn out to be more profitable, after a few years. Thoſe who are delighted with the contemplation of the works of nature, will find many objects in a fruit-garden that well deſerve their attention.

Flowering ſhrubs and trees are often purchaſed by gentlemen at a high price; yet not one of theſe can compare in beauty with an apple-tree, when beginning to expand its bloſſoms. In the firſt, the flowers fade and fall off, and nothing that is uſeful ſucceeds them: on the laſt, apples are formed, which long pleaſe the eye, and afterwards regale the taſte with a pleaſant and healthſome variety of fare.

Beſides

Beſides the above, what ought further to encourage us to proceed without heſitation in forming of fruit-gardens, is the following conſideration, at the ſame time conducing both to our profit and pleaſure.

How complying do we find Nature in favouring our attempts, if we chuſe to aſſiſt her productions by the warmth and ſhelter of a wall, in which ſituation we provide for the delicate kinds of fruit-trees a ſecurity from the rigours of winter, and a defence againſt the ſeverity of ſpring; for being ſo planted, the trees thrive and bear in an extraordinary manner, and the fruit are more certain in forming, and become larger and fairer, than thoſe on any other trees of the ſame kinds that are expoſed to the injuries of the open air: or if we are pleaſed with a beautiful hedge of fruit-trees, we may obtain it, by placing the branches regularly on a trillege, or tying of them to ſtakes, as in an eſpalier. Beſides the beauty of trees which are ſo trained, the fruit ſuffers not ſo readily as on other kinds of trees, that are planted in the open air, by the ſhock of impetuous winds; they alſo in beauty and ſize come

near to the fruit that are produced on wall-trees of the ſame kinds. Are we delighted with fine-ſhaped trees, that are placed in an agreeable order, we can certainly procure them, in the ſtudied round of dwarf-trees, whether they are open or full. Theſe hold a middle place between the trees that are planted on walls, and ſuch as grow with little pruning, as ſtandards: the fruit that they produce are fair, and reaſonably large; and the taſte of them is better than of fruit of the ſame kind that we gather from eſpaliers. Do we chuſe a ſtraight and equal ſtem to ſupport a round ſpread head, nothing can anſwer better than the eaſy regularity of half ſtandards: theſe approach ſtill nearer to ſtandards, and the fruit they produce, hold the ſame rank as the trees; for if they are inferior in ſize and beauty to the fruit of the forementioned kind of trees, they are ſuperior in flavour and taſte. The towering height and wide-ſpreading heads of ſtandards juſtly exclude them from the fruit-garden, where, by their great influence, they would become oppreſſors, and nothing could thrive near them. The orchard is their proper place,

place, where they grow freely, and without any culture amply reward the planter with fruits that are the moſt delicious of all. To conclude the whole, I ſhall only take notice to the planter, that in ſpring fruit-trees will fill him with pleaſing expectation; that they will heighten his proſpect through the ſummer; and at the ſame time that he regales his taſte with the fruits of his labour in autumn, he may enrich himſelf, by diſpoſing of what he finds ſuperfluous in the plenty obtained.

Let me here adviſe ſuch gentlemen as ſhall intend to make extenſive plantations of fruit-trees, to raiſe their own ſtocks, to bud and to graft them, from the following reaſons, which will probably prove perſuaſive to ſuch as earneſtly ſtudy this part of the planter's buſineſs.

1ſt, By this means, they may be certain of the ſtocks, on which their trees are to be grafted or budded.

2dly, When their trees are worked, they will be ſure of the kinds, which they never can be in buying from nurſerymen.

3dly, They will be enabled to make choice of ſuch plants as ſhall be found to be fitteſt for their ſeveral purpoſes.

4thly, They will have it in their power to train them in the moſt ſuitable manner, for finiſhing of their intended plans, or ſupplying of ſuch defects as may happen after they are finiſhed.

5thly, What is taken from their own nurſery, bids fairer for ſucceeding, as there will be no occaſion for the tree being kept any time out of the ground, ſo as to injure its roots between the raiſing and the planting.

6thly, The planters will have it in their power to make obſervations and experiments on their ſtocks and fruit-trees during the whole of their progreſs, from the time that the ſeed is ſown till the tree ſhall come to bear, through its bearing ſtate, and in decay, till it die down.

I ſhall endeavour in the following Treatiſe to give ſuch directions as ſeem to be neceſſary for rearing and training of all the claſſes of trees that are to be found in the fruit-garden of Britain, in as clear and conciſe a manner as may be; for the inſtructions

ſtructions are deſigned to be ſuch, as reaſon may dictate, and experience can warrant to be good.

In order that gentlemen may have it in their power to conſult the books of the beſt authors who have written on the ſubject, I ſhall here ſubjoin the characters of ſome of the eminent writers on gardening that are to be found among the moderns.

Quintinye, who was gardener to Lewis XIV. king of France, and made and planted the curious fruit-garden at Verſailles, in his work is truly an original author: he was an accurate obſerver of nature, and the firſt judicious writer on the ſubject of fruit-gardens. As he well underſtood fruit-trees, with the management of all the different kinds, ſo from his performance much valuable knowledge may be obtained: he alſo baniſhed many of the prejudices of preceding writers in gardening; and perhaps, it may be aſſerted of him, that he has more improved the art of managing a fruit-garden, than any other of the profeſſion; and we owe more to his labours, than to the books of all other writers on this ſubject; for his deſcriptions of fruit are accurate and juſt, and the characters

racters that he has iven of the fruit-trees may be depended on, though ſome variations will happen in Britain.

Stephen Switzer had much practice in England, and his book contains ſome uſeful obſervations, tho' moſt of them are to be found in the works of Quintinye. The account that he has given of the ſeveral kinds of fruit-trees which he put into the collections of fruit-trees that were planted under his direction in England, with the characters of ſome new-diſcovered fruit-trees and fruits, render his book uſeful.

Mr. Laurence's books on this ſubject, may prove inſtructive to ſome readers; but if we except his ſloping ſhelters, we meet with nothing that is new or uſeful of the author's own.

Mr. Miller is rather too fond of finding fault, and ſeveral of his criticiſms are perhaps but ill founded: he alſo underſtands but little of the art of pruning fruit-trees, ſo as to confine them in little room, and promote their bearing; but from obſervation and experience he informs us of what he had found in practice, that ſome kinds of fruit-trees may be trained againſt a wall, ſo as to bear well, without much pruning,

or ſhortening of the branches. He adviſes us to train eſpaliers in a manner ſimilar to that which he directs us to obſerve in placing of the branches of wall-trees: he has alſo preferred making of eſpaliers to raiſing of dwarf-trees, for reaſons which I am afraid the reader will find do not hold in experience. He is ſevere againſt the ancients, where it is evident that he had either not conſulted their works, or did not underſtand them: at the ſame time, we find him retailing their prejudices with all the eclat of new diſcoveries or maxims of his own. We find him in many places an aſſuming dictator, where he ought to have been a modeſt propoſer. I muſt at the ſame time do him the juſtice to declare, that notwithſtanding many obvious faults that are to be found in his Dictionary, it contains a variety of uſeful knowledge to the intelligent, that is no where elſe to be met with.

James Juſtice has publiſhed a book on fruit-trees, in which ſome new kinds of fruit are deſcribed, which may intitle it to be peruſed by the curious; but flowers ſeem to be his proper province; and ſuch

as chuſe to lay out their fortune in purchaſing of flower-roots, or ſpend their lives in admiration of the flowers that they produce, will find him a very proper guide in purſuing ſuch ſtudies. I ſhall now endeavour to obviate ſeveral objections, becauſe, being ſeen through the medium of prejudice, they may prove to ſome readers ſuch ſeemingly inſurmountable obſtacles, that they may prevent many gentlemen from attempting to make plantations of fruit-trees.

In the firſt place, I may obſerve, that it is a common prejudice in the northern parts of Britain, that fruit-trees will neither grow vigorouſly, nor bear tolerably, unleſs in a few particular ſoils and ſituations. This may be true with regard to ſome of the delicate, or late kinds of fruit; but many kinds of apple, of pear, of cherry, and even of ſome plum-trees, will thrive in every ſoil where plenteous crops of corn are produced, or foreſt-trees become vigorous. To try ſome of the hardeſt kinds of fruit-trees is well worth the farmer's care, as the expence attending it is but little; and in many places, he will be

agreeably diſappointed by their ſucceeding; and he will find his labour well rewarded, when they ſhall come to bear.

But let him not flatter himſelf with the ſame ſucceſs, when he makes his plantation in a high and cold ſituation, as when he makes it in a low and warm one; neither need he reckon on ſuch plenteous returns from trees that are planted in a poor and wet ſoil, as from thoſe that are planted in a rich and dry field. Trees neither thrive nor bear ſo well in a place that is expoſed, as they do in one that is ſheltered. Fruit-trees ſuffer many injuries on a north, north-eaſt, or eaſt expoſure, but grow ſafely on a ſouth-eaſt, ſouth, or even weſt expoſure. But after all, the planter ſhould not readily deſpair; for perhaps, in ſeveral unfavourable ſoils and ſituations, ſome hardy trees of the earlieſt kinds may ſucceed, if proper care is beſtowed in cultivating of the grounds where they are planted. The reader will be able to make a proper choice, from the catalogue and deſcriptions of the particular nature of the ſeveral kinds of fruit-trees which ſhall be added to this performance,

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in order that nothing may be wanting which he would incline to know.

The planter will not only find, that to make trial of a few trees, is attended with ſmall expence, but alſo, for his encouragement, many inſtances might be given of unexpected ſucceſs, from plantations of fruit-trees having become profitable in ſoils and ſituations where it was believed to be impoſſible even ſo much as to rear fruit-trees. Let us now turn our attention to ſoils.

A deep rich ſoil of a reddiſh colour, with much clay in it, is found by experience to be fit for apple-trees.

A good fertile ſoil, of a black colour, is proper for plantations of pear-trees.

Cherry and plum-trees thrive on almoſt every kind of ſoil; but where they are expoſed to a great degree of cold, they ſeldom bear well. What ought to encourage planters is, that if the ſoil is by nature tolerably good, it may be brought to any degree of richneſs that they pleaſe, by dung, by compoſts, and by labour.

I cannot help here obſerving, that it is not neceſſary the ſoil ſhould have two, three,

three, or four feet of depth for pear-trees, as is required by Mr. Switzer: I can aſſert from obſervation and experience, that one foot, or eighteen inches, is ſufficient for their thriving well, and bearing plenteouſly.

A firm hard gravel is the beſt bottom for the ſoil in which fruit-trees are to be planted, as the roots are kept by means of this from deſcending beyond the reach of the influences of the rays of the ſun and the atmoſphere; for it is well known to every obſerver who has attended to the operations of nature, that the influences of both of theſe are not only neceſſary to the growth and bearing of the tree, but alſo greatly contribute to the goodneſs of the fruit.

Frequent labouring of the ſoil, while it renders the earth open, alſo greatly promotes its richneſs. See THEORY of AGRICULTURE.

It is evident from experience, that the uſe of dung, when it is laid on the ſurface of the ground in autumn, and wrought into the ſoil the following ſpring, is of conſiderable benefit to all kinds of fruit-trees that are weakly, or that make but

but ſhall advances in growing, before they come to the bearing ſtate: ſuch trees as are vigorous, ſtand in need of none.

I ſhall now give a few directions to the planter, with regard to the manner of procuring proper ſtocks, for ſupporting the kinds of trees that he ſhall incline to propagate; whether they are to be raiſed from the ſeed, to be obtained by cuttings, or procured by laying of branches, or taken from the roots of old trees, when they offer ſpontaneouſly, as in ſuckers, or even the roots themſelves, that have of late been grafted on as ſtocks not without ſucceſs; but firſt of all, it ſeems neceſſary to take notice of ſome of the ſituations and ſoils that are proper for fruit-trees.

THE

THE FRUIT-GARDENER.

BOOK THE FIRST.

CHAP. I.

Of the Situations and Soils that are fit for Plantations of Fruit-Trees.

AS the particles that raiſe the ſenſation of cold in us, do the greateſt injuries to our fruit-trees in Scotland, ſo low ſituations, by their being placed much out of the power of theſe, are generally warmeſt; and for this reaſon ought to be preferred. In ſuch grounds, though they lie on a level, or even in thoſe that aſcend a little, if the aſcent is gradual, when they look to the ſouth-eaſt, or ſouth, by enjoying the benefit of the morning ſun, the proprietor may ſurely promiſe himſelf good and early fruit.

SECT. I. Other aſpects where the ſoil is rich, and the ſituation warm, may be

planted to advantage, though their productions will be later than thoſe of the former. It is an advantage to fruit-trees to be ſheltered from the north and the eaſt, and to lie open to the ſouth and to the weſt. If natural ſhelters to ſcreen them from the injuries of cold air, ſuch as hills, woods, &c. are wanting; this defect may in ſome meaſure be ſupplied, by planting thickets at a proper diſtance, of the kinds of trees that grow faſt, and ſoon become tall and buſhy; as larches, ſpruce or ſilver-firs, Scots or New England pines, or any other trees that are known by experience to thrive beſt on ſuch ſoils and ſituations as theſe are in the particular places where the plantation is intended to be made: the diſtances from the fruit-garden or orchard, at which the trees ought to be planted, are to be determined by conſidering how far their ſhades will reach when the trees ſhall be full grown; for if their ſhades overreach the fruit-trees, it will much injure them, by intercepting the rays of the ſun, which will both retard the ripening of the fruit, and ſpoil their taſte.

SECT. II. In ſuch ſituations as the above ſpecified, fruit-trees ſhall do well, if the

ſoil

ſoil is rich enough to produce good crops of corn, no matter whether they conſiſt of clay, or are made up of an open ſandy ſoil: by making mention of the extremes, all the intermediate kinds of ſoils may be readily underſtood.

SECT. III. Where the ground moſtly conſiſts of a ſtrong rich clay, the trees will grow large, and bear much fruit; but where the ſoil is light and ſandy, the trees will be leſs in ſize, and the fruit fewer; yet they ſhall bear ſooner, the fruit will have a higher flavour, and be better taſted; they ſhall alſo be earlier than the fruit that grow on trees planted in clay.

SECT. IV. We ſhall now conſider the effects of over-abounding moiſture, and of its deficiencies. Soils where water ſtagnates, or even where moiſture is too copious, are improper for fruit-trees; in ſuch, the trees can neither thrive, nor bear fruit; for their roots being chilled, gradually rot, and the trees are generally entirely deſtroyed in a few years. Where the ſoil is very light and ſandy, being incapable of retaining a ſufficient quantity of water for the purpoſes of vegetation, the trees are frequently hurt by the ſummer droughts; and in

ſuch ſoils, they are generally found to be ſo weakly, that they viſibly dwindle and die without bearing any fruit.

SECT. V. To conclude this ſubject, ſome kinds of fruit-trees ſucceed beſt on a moiſt ſoil, others on a dry. The peculiarities in the nature of each kind of fruit-tree, will be afterwards conſidered; and the temperature of particular ſoils muſt be learned from the experience of others, or our own obſervations, as the knowledge of them cannot be further conveyed without long deſcriptions, which would prove tedious. Let me conclude with obſerving, that the crops which the ſoils have commonly produced for ſome preceding years, will afford us an opportunity of judging both of their richneſs and qualities.

CHAP.

CHAP. II.

Containing ſome general Obſervations on the Kinds of Fruit-Trees, and on the Nature of the different Kinds of Stocks that are proper for each Kind.

SHOULD I treat of the kinds of fruit-trees that are planted in Great Britain in the manner of modern botaniſts, I would reduce them to but few genera; for, according to them, Pyrus, or the pear-tree, contains pear, apple, and quince trees; Amygdalus, or the almond-tree, includes almonds, peaches, and nectarines; Prunus, or the plum-tree, comprehends plums and apricots; and Ceraſus, or the cherry-tree, is the common appellation for cherries and geens. But I prefer to the above method one that appears to me to be better contrived for inſtructing of ſuch gentlemen as have given but ſmall attention to this ſubject, as it is chiefly for their uſe that I intend this book. This ſhall treat of them under the generical names by which each kind has been long known,

and is at preſent commonly called in this iſland. The following reaſons have determined me to follow this method, as preferable to all others.

Firſt, Becauſe nature has ſo diſtinguiſhed them from one another, that the particular kinds may be eaſily known at firſt ſight; for inſtance, pear-trees are readily diſtinguiſhed from apple-trees, and quince-trees from both; neither is there the ſmalleſt difficulty, whether they have on their leaves, as in ſummer and autumn, or are without them, as in winter and ſpring. Plum and apricot trees are eaſily known from one another any time of the year; nor can any miſtake ariſe from the fruit, ſo little do they reſemble each other. Peach-trees much reſemble almond-trees, yet the fruit of each are ſenſibly different. The genus of medlars ſeems to have been conſtituted, from the ſimilitude that is found to one another in the flowers and in the fruit; for the appearance in ſome of the ſpecies of the trees, and their foliage, is very different from each other. Cherry-trees and geen-trees, tho' they are much like one another, yet may be known

to

to be different in every ſeaſon of the year; nor is it likely that any miſtakes can happen with regard to the fruit.

Second, As the trees are raiſed and planted for the ſake of the fruit, it ſeems to me to be the moſt proper way to diſtinguiſh the kinds by the fruit, as theſe are the principal objects that the planters keep in view; and it has been proved above, that this diſtinction is really founded in nature. The particular ſpecies likewiſe deſerve to be diſtinguiſhed, for the ſake of the ſuperior excellency of ſome of them to the reſt; neither will this prove a matter of much difficulty to the curious, ſince it has been already ſucceſsfully attempted by Tournefort; and Quintinye has even done it in a better method than that of Tournefort's. Every writer on fruits, ſince the above-named authors, has followed one or other of theſe methods; and ſome have followed both, by blending their deſcriptions together.

SECT. I. I ſhall now endeavour to claſs the fruits, from a natural reſemblance that is to be found in the ſeeds of the ſeveral kinds. The naturaliſt knows, that the ſeeds are young plantules, of the ſame kind

with the tree that produced them. I ſhall divide the whole of the fruits that are cultivated in Great Britain, into four different claſſes.

The firſt claſs conſiſts of pippins;
The ſecond, of ſtone-fruit;
The third, of nuts;
And the fourth, of ſmall fruit.

SECT. II. The firſt claſs have their ſeeds placed near the center; and they are ſurrounded with a ſubſtance, which becomes either ſoft, or breaking, when they are in a ſtate of ripeneſs. Theſe are divided into the four following kinds: 1ſt, Pears; 2d, Apples; 3d, Quinces; 4th, Medlars.

SECT. III. The ſecond claſs have alſo their ſeeds placed in the center; but they are covered with a hard ſtony ſubſtance, and this is ſurrounded with a ſoft pulp, when the fruit is in a ſtate of maturity: there is only a ſingle ſeed in one of the fruit. Theſe are, 1ſt, Apricots; 2d, Peaches; 3d, Nectarines; 4th, Almonds; 5th, Plums; 6th, Cherries; 7th, Geens.

SECT. IV. I now come to the third claſs. In theſe, the plantule occupies a conſiderable part of the fruit, which is commonly called the kernel, and is covered with a ſhell,

ſhell. In this claſs are included, 1ſt, Walnuts; 2d, Cheſnuts; 3d, Hazel-nuts; and many other kinds might be added: but I only make mention of ſuch as are to be found planted both in South and North Britain, and thrive in moſt places in the open air.

SECT. V. The fourth claſs of fruit, when they are ripe, have their ſeeds placed in a ſoft pulp; and when they are taken out and carefully examined, ſome of them reſemble pippins, as in the firſt claſs; and others ſtones, as in the ſecond. This then ſhall contain; 1ſt, Grapes; 2d, Gooſeberries; 3d, Currants; 4th, Barberries; 5th, Mulberries; 6th, Raſps; 7th, Strawberries.

SECT. VI. As little advantage can be reaped from planting ſome of the kinds of fruit-trees that are to be found in the above claſſes, I ſhall therefore particularize ſuch of them as beſt deſerve the planter's care. Apples and pears claim the preference to any other kind of fruit that is to be found in the northern counties of this kingdom, for the following reaſons: The trees not only thrive vigorouſly in many places, but alſo bear plentifully; the fruit are not hurt by being carried to market, and are readily

readily ſold for a good price. In low warm ſituations, where the ſoil is proper for apple and pear trees, gentlemen cannot employ their grounds to better purpoſe, or improve them in any manner that will turn out ſo well, or prove ſo profitable, as in planting of orchards.

Quince-trees ſeldom bear well in Scotland, neither are the fruit eſteemed: the caſe is different in England.

Medlar-trees are little known or ſought after in North Britain; neither the fruit nor the trees have given much ſatisfaction in the trials that have been made: they are often found in England.

The different kinds of ſtone fruit may be cultivated for private uſe; but unluckily for the planter's intereſt, when ſeveral of the kinds are ripe, they are too delicate to bear tranſporting to any diſtance without being ſpoiled; and if they are pulled before maturity, they never come to perfection; ſo that they can only prove profitable, when the plantation is made in a ſituation that is near to ſome great town. Many of the kinds are indeed ſo delicious to the taſte, that they deſerve our greateſt care; and notwithſtanding the rigours of

our

our winters, and the ſeverity of our ſprings, in this cold climate, many of the beſt kinds are planted on walls with great ſucceſs, and in favourable ſeaſons they bring us plenty of charming fruit. Several ſpecies of plum-trees, and ſome kinds of cherry-trees, thrive and bear well in the open air, in many different places. Geen-trees ſucceed almoſt every where in Scotland. The fruit of cheſnut-trees ſeldom come to perfection in this country, yet the trees themſelves grow vigorouſly in low ſituations and good ſoils.

I have eaten walnuts taken from trees that grew in a warm ſituation, and a ſouth aſpect; the fruit were perfectly ripe; and I have planted ſeveral of them, to try if the trees would riſe; and the plants are now equally ſtrong, as thoſe that were produced from foreign ſeed of the ſame age.

I muſt own, at the ſame time, that from the experiment I made, there is no reaſon to prefer the Scots walnuts for plantations to thoſe that come from abroad. Both cheſnut and walnut-trees are delicate, and part of their tops are killed every ſpring, when

when they are planted in cold ſituations. In places where they are found to ſucceed, the firſt may be planted for variety, and the laſt may be planted for the ſake of the timber, as well as of the fruit.

Filberts may be planted by ſuch as are fond of the fruit: they will find, in moſt ſituations, that tho' the trees are hardy, yet the crop of fruit is uncertain.

Vines will only ſucceed in very warm ſituations, and proper ſoils. They require the beſt aſpected walls; and even on theſe the fruit are apt to fail, unleſs in ſeaſons that are uncommonly favourable. Few of the kinds of grapes ripen in Scotland, unleſs when they are aſſiſted by artificial heat, or ſheltered from the colds of the climate by glaſs-frames, &c.

Mulberry-trees thrive but poorly in ſome ſituations, and their fruit come to little perfection; but all the other kinds that are contained in the fourth claſs, will thrive well, and bear plentifully in the open air, almoſt every where in Scotland. Before I leave this ſubject, it ſeems proper to inform the reader, that what Sir Charles Linnæus and the modern botaniſts call

ſpecies

ſpecies in fruit-trees, I name genus; and what they conſider as varieties, I denominate ſpecies.

SECT. VII. Here perhaps ſome reader who has raiſed foreſt-trees, and found that the ſeed never failed to produce the ſame kind of tree with that from which it was taken, may expect the ſame ſucceſs from ſowing the ſeeds of ſome of the beſt ſpecies of fruit-trees, flattering himſelf with the hopes that the fruit of the trees that he raiſes, will be ſimilar to the fruit from whence the ſeeds were taken. But leſt he ſhould be diſappointed, it is proper to inform him, that in the ſeeds of fruit-trees, nature greatly deviates from that uniformity to be found in foreſt-trees; for from ſowing the ſeeds of the ſame ſpecies of fruit, we obtain a variety of plants, almoſt equal to the number that is raiſed, the greater part of which are different from one another, and from the mother-plant; and when theſe ſhall come to bear, a more ſenſible difference will be obſerved in the fruit, than what we perceived in the trees: and yet perhaps in a thouſand trees that are ſo raiſed, we will not meet with one kind of fruit poſſeſſing ſuch commendable qualities,

lities, that it deſerves to be multiplied, or received into either the fruit-garden or orchard, unleſs when we plant orchards with a view to making of cyder. The above method of procuring of fruit-trees, when we have in view the goodneſs of the fruit, is then unadviſeable, as the expence of it is certain, tho' the ſucceſs be doubtful. What method ſhall we then follow to obtain trees that produce good fruit? Find out any kind of fruit with which you are well pleaſed, and by budding or grafting the tree on proper ſtocks, you are ſure of obtaining the ſame kind to any extent that you ſhall be pleaſed to multiply them to.

SECT. VIII. It may perhaps prove agreeable to ſome of my readers, to make mention of the particular genus's which are commonly increaſed by budding or grafting; as the kinds that may be obtained from ſeedlings, that are raiſed and planted out, are by far too uncertain to be truſted to, for furniſhing deſerts to the tables of ſuch gentlemen as are curious in fruits. The proprietor ought then to make choice of the moſt approved kinds of pears, of apples, of medlars, of quinces, of apricots,

of

of peaches, of nectarines, of plums, of cherries, of walnuts and hazel-nuts; of each of which trees the planter may propagate as many as he pleaſes, when he is in poſſeſſion of their proper ſtocks.

SECT. IX. It ſtill remains to enquire into the manner of obtaining proper ſtocks on which to graft the above kinds of fruit. We ſhall now attempt, in the firſt place, to inſtruct the reader how the ſeveral kinds may be obtained from ſowing of ſeeds; then afterwards ſhow him, that ſeveral kinds of ſtocks may be procured from ſuckers and from cuttings, as alſo from layers, and by making uſe of the roots. I now come to the ſeeds that are proper for raiſing of pear-ſtocks.

SECT. X. The ſeeds of pears may be uſed indifferently for raiſing of ſtocks, whether the fruit were taken from wild pear-trees, or from trees that bore good fruit, and had been formerly grafted. The following differences may be obſerved: the ſtocks that are raiſed from the ſeed of the wild pear, grow more vigorouſly for the greater part, than the ſtocks that are raiſed from the beſt kinds of pears: the grafts, after being inſerted and united to

them, commonly thrive better; and the trees ſo multiplied, are found to be hardier; for which reaſon the trees that have been grafted on wild pear-ſtocks, are to be preferred for making of plantations in bad ſoils, cold ſituations, or even for orchards in general. Theſe kinds of ſtocks are eaſily known, both in the ſeed-bed and nurſery, by their ſmall leaves, numerous branches, and frequent prickles. On the contrary, ſuch ſtocks as grow up from the ſeeds of grafted pears, have larger ſhoots, leaves, and eyes, than the preceding; the bark is commonly more coloured; they are for the greater part free from prickles; and ſome of them in their foliage and appearance, reſemble grafted pear-trees.

The ſeeds of ſome of the high flavoured kinds of pears, as the muſk-pears, &c. have been alledged to communicate their flavour from the ſtocks to the fruit of the trees that have been grafted thereon. Though this has often been aſſerted, yet it is perhaps not well ſupported by obſervation. But to ſuch as may incline to try the experiment, I would recommend for making of the trial, the ſeed of the muſcat fleury, autumn muſcat, or the winter muſcat

muſcat pear. The fruit of the firſt is ſo highly flavoured, as to deſerve the preference.

SECT. XI. Of apple-ſtocks that are to be raiſed from ſeed.—Apple-ſtocks that are raiſed from the ſeed of crabs are the hardieſt; and on them the beſt kinds of apple-trees take readily by grafting, and not only grow vigorouſly, but moſt of them bear plentifully. Almoſt all of the crab apple-trees that we meet with in Scotland, ſeem to have been raiſed from the ſeeds of apples taken from grafted trees; for they have not the wild appearance of Engliſh crab-ſtocks, particularly of ſuch as we purchaſe from the nurſerymen at London; for on a compariſon, they are neither ſo hard in the wood, nor their prickles ſo frequent; their leaves are not ſo ſmall, nor do their branches grow ſo numerous. From what I have obſerved of the effect of crab-ſtocks on the trees that are ingraſted, I would lay it down as a maxim, that the wilder the crab be, it is the better ſtock for any kind of apple-tree that is intended for an orchard. We find in experience, that ſuch trees generally grow more vigorouſly, and are conſiderably hardier. Mr. Switzer has aſſerted,

that the intermixture of that ſharpneſs with which the crab is naturally endowed, gives the briſkneſs of taſte ſo valuable in apples.

The ſeeds of grafted fruit may likewiſe be ſown with the ſame view; nor do the plants that are ſo raiſed, make bad ſtocks, though they are not equal in goodneſs to what we raiſe from the ſeed of crab-apples. The true paradiſe ſtock is a ſmall ſhrub, that bears a fruit much reſembling the leaſt kind of crab-apples. Could theſe be procured, ſtocks might be raiſed from their ſeed, which would much dwarf the ingrafted apple-trees, and bring them ſooner to a bearing ſtate than any other kind of ſtocks; only the trees that are grafted on them grow not ſo large, nor are they ſo long-lived, as the ſame kind of apple-trees that are grafted on other ſtocks.

SECT. XII. Of ſtocks raiſed from the ſtones of the kinds of fruit that are contained in the ſecond claſs.—The ſtones of any kind of plums may be ſown for ſtocks; though thoſe of the muſcle and white pear-plum are preferred by the nurſery-men, for budding of peach-trees, of nectarine-trees, and ſome of the beſt kinds of plum-trees on. Next to theſe are the ſtones of the

the Julians, damaſks, &c. I have raiſed ſtocks from the ſtones of the white Magnum Bonum, and other good kinds of plums: ſome of them were budded with ſucceſs. The trees bear well; but the ſtock in growing does not keep pace with the tree; nor do theſe ſtocks take ſo readily when they are grafted, as the above kinds do.

White bullace ſtones may be ſown in order to raiſe ſtocks for budding or grafting of apricots, as they are ſaid to dwarf the trees without injuring their bearing.

Almonds may be ſown by the curious, who ſhall incline to raiſe ſuch ſtocks, for budding of peach or nectarine trees on; but I am afraid, that trees ſo raiſed, when they are planted out, will neither be able to bear our ſoil or climate, unleſs in ſome very favourable ſituations.

The ſtones of heart-cherries, or any other kind of cherries, may be ſown for ſtocks to multiply cherry-trees; but ſuch trees as are intended for ſtandards in the open air, ſhould be budded or grafted on ſtocks that were raiſed from the black cherry, or from geens.

The above are the chief ſtocks to be raiſed for propagating of the beſt kinds of

fruit-trees. Some directions ſhall now be given, as to the manner in which they are to be ſown and reared. But we ſhall firſt conſider the manner of preparing the ſeed.

SECT. XIII. The pippins ſhould be carefully taken out of the fruit, in ſuch a manner as not to injure the included plantules: let them be intirely freed from the pomace, or membranes that cover them, and kept in dry ſand till the month of October, or November, which is the proper time for ſowing them; for if you examine the pippins that have been ſown at this time, in the end of February or beginning of March following, you will find them conſiderably advanced in the growth of both the root and ſtem; whereas ſuch as are ſowed in the months of February or March, are ſeveral weeks later in ſpringing and appearing above ground, than thoſe that were ſown in October or November; and certain it is, that the earlier they come up, the ſtronger the ſeedlings will be at the approach of winter, and the abler to reſiſt whatever may happen injurious from the froſts in winter, and the following ſpring.

Moſt kinds of pippins come up the firſt ſpring; yet ſome of them do not make their appearance till the ſecond, or even later. In ſowing they may be placed from two to four inches deep in the earth; in light ſoils they ſhould be placed deeper than in heavy ſoils.

SECT. XIV. Such ſeeds as are included in ſtones, if they are ſown as has been directed for pippins, will continue fifteen months, or more, in the ground without growing; ſo it is a better method to preſerve them in dry ſand for twelve months, or till the beginning of that winter after which you expect them to ſpring up; then ſow them in the month of October or of November, placing them from four to ſeven, or even nine inches deep in the ſoil, leſt the winter froſt ſhould hurt them; for it often occaſions their being turned out of the ground, when they are placed too near the ſurface in ſowing. This accident may indeed be prevented, by rolling the ground in which they are placed frequently through the winter, when the weather is freſh, with a rolling-ſtone; which practice will alſo keep the ſeeds from being injured by mice, or turned

upon the ſurface, by the working of moles below ground, &c.

In the month of February, the little plants contained in the ſtones begin to protrude their radicles; and after theſe have grown ſome time, and come any conſiderable length, the geens begin to riſe; ſo that we muſt beware of rolling the grounds after the end of January, in which they are ſown, leſt we ſhould cruſh the tender roots, or hurt the riſing ſtems.

SECT. XV. Kernels, or the nut kind, grow the firſt ſpring after they are ſown, or rather planted: for the ſmalleſt of this kind ſhould be placed at leaſt half a foot deep in the ſoil; and ſome of the largeſt kinds may be planted twelve inches deep, more or leſs, according to their largeneſs or ſmallneſs. Particular care ſhould be taken to prevent the mice, or other creatures, from eating them; which they certainly will do, if they can come at them, before the roots of the plantules begin to grow.

CHAP.

CHAP. III.

Containing Directions for the Sowing of the Seeds that produce the different Kinds of Stocks, &c.

OUR firſt care with regard to a ſeminary is, to find out a proper ſpot of ground, and prepare it in ſuch a manner as to render it fit for the reception of the ſeed.

SECT. I. Whatever ground is known to have produced a large increaſe, in a conſtant ſucceſſion, when in crops of corn, &c. is a proper ſoil for making of ſeed-beds: and as its fertility was remarkable in the former crops, ſo in theſe, the richneſs of the ſoil will become viſible in the vigorous growth of the ſpringing plants.

SECT. II. In order to prepare for the ſowing of the ſeeds, let the ground be trenched as deep as the good ſoil reaches; freeing it carefully, in performing of the work, from roots, large ſtones, or other incumbrances; and then level it either plain or ſloping, as anſwers beſt to the ſurface of the field. To keep it one year in ſummer-fallow, will enrich the ground, and free it

from many troubleſome weeds, provided it be always delved, or hoed, whenever the weeds ſhall appear. If you ſuſpect that it will not be rich enough, after it has been expoſed to the atmoſphere for one winter and ſpring, and kept in fallow thro' the ſummer; you may cauſe dung to be ſpread over its ſurface in autumn, and delve it down the ſpring following. When you have brought the earth to a proper mould, and degree of richneſs, your ſeeds may be ſown on beds three feet and a half broad, and let them be covered to a proper depth: this may be done, by putting to the ſides the uppermoſt ſoil from off the beds before ſowing of the ſeed; and after they are ſown, draw it over them, and add earth from the furrows or paths between the beds, till the ſeeds be ſufficiently covered. The paths ought to be made two feet wide, which will afford enough of earth for covering the ſeeds.

SECT. III. Keep the beds free from weeds during the ſummer and autumn. After your ſeedlings have continued in theſe for two years, it will be proper to take them up out of the ground, and plant them in a nurſery, in the manner that ſhall be

be directed. I think it my duty to inform my reader, that perhaps he will advance faſter, by obſerving the following method of raiſing his ſtocks, and in which the practice upon the whole will prove leſs expenſive.

SECT. IV. The ſeed may be ſown in drills according to the new huſbandry, as it has of late been called by ſome of the writers on huſbandry. After your ground has been properly prepared in the manner above directed, at the diſtance of three feet, over the whole plot that you intend to ſow, make drills of ſuch a depth as the particular ſeed requires. In the drills place the ſeeds in the month of October, or November, rather too thick than too thin, as the plants can be drawn out afterwards, where they ſtand too near each other. The proper time to draw them will be, when they are one or two years old, as they can then be put into a nurſery by themſelves. In thinning of the rows, ſuch ſtocks as you intend for budding or grafting, in order to make dwarf-trees, may be left at one foot diſtance from each other in the rows.

Such as you intend for planting out as half-

half-ſtandards, may be left at leaſt two feet diſtant in the rows.

Thoſe ſtocks that you deſign for ſtandard-trees, when they ſhall be worked, may ſtand at leaſt three feet from each other in the rows. The above diſtances are determined on the ſuppoſition, that thriving plants offer at the proper places; for if they do not, the diſtances may be varied for the ſake of vigorous plants, without regarding the irregularities that may afterwards appear in the poſition of the ſtocks.

SECT. V. The advantages of the above manner of rearing ſtocks are, the ground can be delved, or hoed, between the rows with eaſe; the rows can be cleared from weeds, either by hoeing or hand-weeding; and dung may be carried and put on the ground, if needed: it can likewiſe be pointed in, without hurting of the plants.

Stocks thus raiſed, ſhall be fitter for being budded and grafted in four years time, than the tranſplanted ones will be in ſix; they will take better, when worked in both ways; and the buds and grafts advance faſter in the former, than in the latter.

One objection will probably be made to this

this practice, that as the ſtocks have never been removed, nor the roots ſhortened, theſe will be found to be large and long, and that there are fewer lateral roots, than in ſuch as had been tranſplanted. The above are true; but in planting theſe trees out, the pruning of the roots properly may remedy their defects, and fit them for whatever purpoſe you ſhall intend them in finiſhing of your plans. When they are deſigned for dwarfs, the root (for it will be no hindrance to the tree's ſucceeding, tho' it ſhould have only a tape-root) or roots, may be pruned ſhort: when for half-ſtandards, they may be left longer; but if you ſhall plant them as ſtandards in orchards, no pruning at all will be required, unleſs when the length of the roots is greater than the depth of the ſoil in which they are to be planted. I ſhall now take notice of the manner how the other kinds of ſtocks may be procured.

CHAP.

CHAP. IV.

Of ſuch Stocks as are not raiſed from Seeds, but to be obtained in different Manners.

SECT. I. SUckers are plants that ſpring up from the roots of trees, and they are always of the ſame kind with the roots from whence they proceed; and conſequently, are always of the ſame kinds with the ſtocks of grafted trees.

SECT. II. If they ſpring up at a diſtance from the tree, are carefully raiſed out of the ground, their roots properly pruned, and they planted in a nurſery, at the ſame diſtances as have been already directed for leaving of ſeedlings in the rows; when the ground is carefully laboured between them, and the ſuckers taken away ſoon after they appear, provided they ſtand long enough in the ground to produce new and vigorous roots; they will make tolerable good ſtocks.

SECT. III. The common aſſertion is, that the plants ſo reared, are more apt to ſend up ſuckers than the ſtocks that have been raiſed from ſeed. When this

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is true, it is perhaps owing to their lateral roots having been produced near to the ſurface of the ground; for it is aſcertained by experience, that all fruit-trees whatſoever, whenever their roots approach near to the ſurface, whether they are accidentally raiſed by labouring of the ſoil, or take that direction in growing, ſend up ſuckers, no matter whether the trees that produce them have been raiſed from ſeed, or obtained in any other of the ways that are commonly put in practice.

SECT. IV. Mr. Quintinye has recommended ſuckers of Julian and black damaſk plum-trees for budding or grafting on, in propagating of the trees that bear the beſt kinds of plums. It is alſo evident in his works, that he uſed ſuckers that had been taken from the roots of old trees, for grafting of the beſt kinds of apples and pear-trees on: he likewiſe employed ſuckers for budding of cherry-trees on.

I am convinced, that moſt of the old fruit-trees that we meet with in Scotland, have been reared by grafting or budding them on ſuckers; and their good bearing ought rather to encourage us to raiſe fruit-trees on ſuckers in the ſame manner, than

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to lay aſide their uſe altogether, particularly when other kinds of ſtocks cannot eaſily be come at.

SECT. V. Cuttings of quince-trees, branches of pear-trees, of codlings, and ſome other kinds of apple-trees with berry-knots, or that have ſcabby roughneſſes on the back, if the cuttings are planted in September, or February, in a rich ſoil, placed in the ſhade, and kept moiſt during the ſpring and ſummer, will take to growing, and advance gradually in length; and after they have acquired enough, they will make good ſtocks. The planter muſt keep in mind, that the buds or grafts on theſe, ſpring not ſo vigorouſly as they do on ſtocks that have been raiſed from ſeed; nor do the trees become large; ſo that theſe ſtocks are only proper for dwarfing of trees.

SECT. VI. Monſieur Lignon, in his *Maniere de provigner les plantes*, is of opinion, that moſt kinds of trees, &c. may be propagated by placing cuttings of them in phials that are filled with water, changing the water often, and adding a little ſoil to it. After the roots have begun to appear, increaſe the quantity of mould as

the roots advance; and when they have acquired ſufficient ſtrength, place the cuttings in moiſt ground, and encourage their growing by frequent waterings, till they become ſtrong. See VALEMONT *Curioſité de l'Art.*

SECT. VII. Layers of quince-trees, after they have produced ſufficient roots to nouriſh them, are fit ſtocks for dwarfing of pear-trees; and tho' ſtocks of quince-trees have often ſucceeded from planting of the cuttings, yet by obſerving the following method, you will be ſurer of ſucceſs, as they take more readily to growing. The branches, after being twiſted, may be depreſſed into the ſoil, to the depth of five, ſix, ſeven, or eight inches, and there held down with forked ſticks thruſt into the ground, or otherways: let the ſmall ends of the branches, with two, three, or more eyes on them, be raiſed a little above the ſurface of the ſoil, as the ſhoots are generally produced from theſe. By thus continuing one year, ſome vigorous ones may be fit for taking off and tranſplanting; but two years are required in moſt of them, before they get ſufficient roots to ſupport them when planted in the nurſery. Some

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of them will perhaps require more time; but ſuch as have grown vigorouſly for two years, may be ſafely tranſplanted, and will ſurely ſucceed.

Stocks of any kind of plum, pear, or crab apple-trees, &c. may be obtained by the ſame management in laying of their branches: all kinds of buds and grafts grow on theſe ſtocks, much after the manner that they do on ſtocks that have been obtained by cuttings.

SECT. VIII. Any root of the ſize that you incline, may be cut off from a tree of ſuch a kind as you know to make a proper ſtock for the graft that you intend to inſert. Raiſe the end that has been cut off from the tree a little above the ſurface of the ſoil, and there graft it. Such ſtocks as are taken from the roots, are ſaid to have a conſiderable effect in dwarfing every kind of tree that is ingrafted on them.

The above experiment may be tried by ſuch as are curious and fond of learning the effect of it; for my part, I can ſee no reaſon for the practice, unleſs on the ſuppoſition that no other ſtocks of the kind are to be found.

CHAP.

CHAP. V.

Of the Nurſery.

A Good ſoil is fitteſt for a nurſery, becauſe thriving and vigorous plants always ſucceed beſt when they are tranſplanted into any kind of ſoil; nay even into bad ſoils; tho' this aſſertion is contrary to a received maxim among the gardeners.

SECT. I. The ground being trenched and levelled, plant out your ſtocks, placing every particular kind by itſelf: ſuch as are intended for raiſing of dwarf-trees, may be placed at one foot diſtance in the rows, and two feet of intervals may be left as a proper diſtance between the rows.

What plants you intend for forming into half ſtandards, after they are grafted, may be planted at two feet diſtance every way.

Stocks that are intended for ſtandard-trees, may be planted three foot diſtant every way.

SECT. II. Let the plants be ſo placed in the ground as to ſtand upright, and appear exactly in the line, whatever way they are viewed. This is not only beautiful to look

at, but ſuch plants as are placed exactly perpendicular, grow with the greateſt vigour and regularity.

SECT. III. Shorten the tape roots of your ſeedlings, before you put the plants into the ground; and take care, that the part of the root remaining be not doubled in planting: nor ſhould any of the other roots be doubled; for if any of them are ſo planted, the part will be apt to be broken off when they ſhall afterwards be raiſed in order to tranſplanting, particularly when they are forcibly pulled, while they continue firm in the ground; and if this accident happens to the principal root, a little below the ſurface of the ground, it renders the tree uſeleſs.

SECT. IV. Keep the ground in your nurſery clean from weeds, by frequent hoeing, or hand-weeding, and delve it at leaſt twice a year; the proper times for performing of this work are in the ſpring and in autumn. If your plants do not take to growing vigorouſly by this culture of the ſoil, you may conclude that the ground is too poor; and this defect will be beſt remedied by ſpreading of dung, or other enriching ſubſtances, on the ſurface of the ground

ground in the interſtices, either in autumn, or the beginning of winter, and point them down the following ſpring: for by the above method repeated annually, you will certainly come at laſt to have thriving trees, in every ſoil that is tolerably good.

SECT. V. Stocks may be budded or grafted when they are grown to the thickneſs of one's finger, or even tho' they ſhould be ſomewhat leſs in ſize: ſuch plants as are moſt vigorous, and have a ſhining bark, are the fitteſt for being budded and grafted. The time that they will take in growing, before that they are fit for receiving of buds and grafts, can only be determined from their degree of vigour: ſome of them always grow faſter than others, and we will certainly loſe our labour in the budding or grafting of an ill thriving ſtock. Such ſtocks as are vigorous, the earlier they are worked, the ſhorter is the time that they take, till the graft and ſtock is united togethe, that is, till the ſtocks heal over; for by means of this, they are ſecured from loſing of the grafts or buds, either by high winds or other accidents. Such ſtocks as are grafted when young, prove good trees; where-

as, when the ſtocks are large before budding or grafting, the trees that ſpring from each of them, are in danger of being ſeparated from the ſtocks by accidents, and the ſtocks will ſometimes rot before they are covered by the buds or grafts: this has often happened, and has diſappointed the planter, perhaps after they had been tranſplanted for ſeveral years, and had occupied ſome important place in a favourite plan.

CHAP VI.

Containing the different Methods of propagating all of the Kinds of Fruit-Trees that the Planter poſſeſſes.

THESE may be reduced to the following:

Firſt, by budding;
Second, by grafting;
Third, by laying;
Fourth, by ſuckers;
And fifth, by planting of cuttings, or of buds.

I ſhall endeavour to give the reader a diſtinct idea of each of theſe, and the purpoſes

poſes that they ſerve in gardening, before I come to deſcribe the manner in which each of them may be performed.

SECT. I. Budding, ineyeing, or inoculating, for this practice has been called by all of the above names in the Engliſh books that have been written on huſbandry and gardening, is the art of placing a bud of any kind of fruit-tree that we make choice of between the bark and wood of a proper ſtock, ſo that its wood and bark may be ſoon united to thoſe of the ſtock in ſuch a manner, as that it may become a tree of the ſame kind with the one from which the bud was taken. This practice has been generally preferred to grafting, for the following reaſons: Becauſe the ſtocks can be two or three years ſooner budded than grafted; and the trees from buds not only grow faſter than thoſe from grafts, but are alſo found to be ſounder; becauſe they in a very ſhort time incorporate with the ſtocks, which prevents every part of the tree ſo formed from receiving any damage by the weather, &c. Beſides the above reaſons, budding does little injury to the ſtock; and if it ſhould

fail, the ſtock is ſtill fit for grafting or rebudding, whenever the next proper ſeaſon for either ſhall come on.

SECT. II. Buds of the ſame year's growth, in all kinds of ſtone-fruit, take readily, when they are properly worked. The ſtocks that are fit for pear and apple trees, may be inoculated with buds of the ſecond year's growth; tho' they will alſo take from buds of the ſame year.

Pear-trees may alſo be reared on quince-ſtocks by ineyeing. It has often been aſſerted by authors who have treated expreſsly on fruit-trees, that ſuch trees as are inoculated prove better bearers than thoſe of the ſame kind that have been grafted. It is a pity that any one ſhould imbibe prejudices in an affair where the point can never be determined in a ſatisfactory manner.

SECT. III. Grafting is performed ſucceſsfully in a variety of different manners. I ſhall afterwards take notice of ſeveral of the different methods; but let me firſt obſerve, that by means of this practice, we provide a branch of a good kind of fruit-tree with part of a ſtem for ſupporting it, and

and ſuch roots as are known in experience to be fit for drawing its nouriſhment from the ſoil.

In this way any kind of good apple-tree takes readily to growing, when grafted on paradiſe ſtocks, or any other ſtocks that are proper.

Pear-trees take readily and proſper, when grafted on ſtocks of their own kind; but many kinds of them will not ſucceed, when they are grafted on quince-ſtocks.

Moſt kinds of ſtone-fruit may likewiſe be grafted on their proper ſtocks; but they take more readily and ſucceed better from budding.

SECT. IV. Laying is the next method of multiplying the kinds of fruit-trees that we poſſeſs: it is performed by twiſting a branch of any good kind of fruit-tree, and laying it to a proper depth in a rich ſoil, in the manner that has been already directed. See CHAPTER IV.—While it is thus placed, it puſhes out roots that ſupport itſelf; and ſuch of the layers as grow vigorouſly, may be cut off from the mother-tree, and tranſplanted after the firſt year: the remaining plants, if they have thriven well, we may be certain of their being

properly rooted, ſo that they be planted out at the end of the ſecond year; and ſuch as are weakly, may be left till the third year; and if they have not by that time acquired a ſufficient degree of vigour, they may be thrown out of the ground as uſeleſs.

It is proper to obſerve, that all the ſuckers which ſhall ſpring from the roots of trees that are thus obtained, will be of the ſame kind with the trees; and by means of theſe, we will have it in our power to increaſe the number of good kinds, without either ſtocks, budding, or grafting.

But as the ſucceſs of laying is not always certain, I ſhall propoſe another method of proceeding, by which we may obtain plenty of ſuckers from any kind of tree that will take by budding or grafting: this may be accompliſhed, by grafting either in a root, or very low in a ſtock; as alſo, by budding near the ſurface of the ground in the ſtock. After theſe trees have taken, and are become ſtrong, raiſe them out of the ground, and in planting again, place ſome of the grafted part of the tree ſeveral inches deep below the ſurface of the ſoil; it will not fail to ſend forth roots into the ground

ground: and when theſe new roots have acquired ſtrength enough, which may be known by examining them after carefully turning of ſome of the mould that covers them, the tree may be again raiſed out of the ground, and the ſtock cut off; then prune the roots that have ſprung from the grafted part of the tree, if they are found to be too long, and there replant it; and all the ſuckers which ſhall afterwards ſpring from this tree, will be of the ſame kind with the tree itſelf, and ſhall grow and bear nearly in the manner that it does. I ſhall here preſent my reader with the experience of Monſieur du Hamel, who is a veteran in the ſtudy of fruit-trees. He informs us, that plums ſucceed well in this manner, and particularly the Queen Claude. He has further declared his ſucceſs, which, when tranſlated, is as follows: "We have in this manner obtained five or ſix kinds of plums, of which the ſuckers have produced good fruit." See *Traité des Arbres, &c. qui ſe cultive en France*, vol. ii. page 185.

When ſuckers are planted in orchards, or fruit-gardens, they thrive not ſo well, neither do they riſe ſo high, or become ſo large,

large, as the ſame kind of fruit-trees do, when they have been grafted or budded on proper ſtocks. Whatever good kinds of fruit-trees are obtained in ſuckers, may be placed in ſuch parts of plans as require low growing trees; and moſt of them will certainly make excellent dwarfs, if they are properly pruned in the training.

Damaſcens, and moſt other kinds of plum-trees, when thus propagated, prove excellent bearers.

SECT. V. Cuttings of fruit-trees, are parts of the branches thruſt into the ground for ſix or eight inches, or more; and ſome inches remain above the ſurface: they firſt produce roots from the end of the lower extremity, or near it; and theſe having grown for ſome time, buds are formed, and ſhoots make ſome progreſs from the eminent part; and by the advancing of theſe two, the fruit-tree is formed.

A new method has lately been propoſed for propagating of fruit-trees, as well as other kinds of trees. It is as follows: Take part of a branch of the tree you would incline to raiſe, cut it tranſverſely both above and below the bud,

keeping at as great a diſtance from it as the neighbouring buds will permit: cover the cut ends with grafting wax; and keeping the bud uppermoſt, place it from one to four inches deep in the ſoil, covering it carefully with mould, the bud ſtrikes roots, and produces a tree of the ſame kind with the one from whence it was taken. This method was put in practice by ſeveral gentlemen of my acquaintance, and I have alſo tried it, tho' it never ſucceeded tolerably; for tho' in ſome caſes, when the buds were placed in a hot-bed, they made ſome advances in growing, yet they continued but ſhort while in a thriving ſtate, and none of them ſurvived the firſt year.

SECT. VI. The methods that have been made mention of, in the firſt four ſections of this chapter, are ſure means of increaſing the number of any kind of fruit-trees that we poſſeſs, but never can produce a ſingle kind of tree whoſe fruit is new: in what manner theſe had been acquired by former planters, or how new kinds may be obtained by us, deſerves our attention.

Variety

Variety always has, and ever will be pleaſing to mankind, no matter what the objects be; and the ſelfiſh enjoyment of a new fruit may prove agreeable to ſome, while others will think themſelves happy to have it in their power to beſtow on their friends or neighbours a particular kind of fruit that is good and new. I ſhall now offer a few directions to the planter with regard to the method by which he may obtain an almoſt endleſs variety of trees, which ſhall produce fruit different from each other.

CHAP. VII.

Containing the Manner of obtaining Varieties, or rather of procuring new Kinds of Apple and Pear-trees, &c.

FLORISTS have been very induſtrious, and ſpared neither pains nor expence in raiſing or procuring of new flowers. Botaniſts have often riſked their lives in ſearching after plants that had nothing but novelty to recommend them; and ſhall we neglect to raiſe and cultivate fruit-

fruit-trees, whoſe productions ſo far exceed the above in uſefulneſs and merit? By the induſtry of the floriſts, the knowledge of flowers has been reduced to a pleaſing ſcience on certain principles; and the art of cultivating them has been ſo much improved of late, as to enable the curious to produce charming varieties, in a continued ſucceſſion through the ſeveral ſeaſons. Scarcely has any of the vegetable productions in any part of the globe of the earth, eſcaped the obſervation of the attentive botaniſts; and various attempts have been ſucceſsfully made to introduce a ſcience which might comprehend the greater part of them, ranged in an intelligible manner. But fruit has as yet generally remained in the hands of gardeners, who have been, and are for the moſt part mere labourers, without learning or ſcience. Hence we may eaſily account for the confuſion that has prevailed in the names, and the ignorance of the kinds that is every where to be met with.

SECT. I. I ſhall in the firſt place obſerve, that all the kinds of fruit-trees we are in poſſeſſion of, have been originally obtained from ſeeds that were either dropt

into the ſoil by accident, or ſown with deſign to raiſe fruit-trees.

In the ſecond place, it appears more than probable, that the ſeeds of the beſt kinds of fruit, when they are ſown, bid faireſt for ſucceſs, in the obtaining of trees that ſhall bear good fruit of new kinds.

I muſt at the ſame time deal ſo honeſtly with my reader as to inform him, that his chance is but ſmall of raiſing from ſeed any new kinds of trees, whoſe fruit ſhall be equal in goodneſs to ſome of the kinds which we already poſſeſs. He will undoubtedly obtain varieties, equal perhaps in number to the plants that he rears: but as in ſome thouſands of them, ſeldom is one good kind to be found, I would not raſhly adviſe the planter to ſo expenſive a project, where the ſucceſs is ſo doubtful.

SECT. II. Such farmers as make extenſive plantations of fruit-trees with a view to the making of cyder or perry, will have the beſt chance of getting new kinds at the ſmalleſt expence, as every kind of fruit-tree that ſhall bear well, will be uſeful in their plans. But leſt it ſhould be thought that the obſervations which I have

have communicated, do not ſufficiently anſwer the title of this chapter, I ſhall deſire my readers, for the ſake of inſtruction, to compare grafted trees with wildings, and they will find ſome eſſential marks whereby they may diſtinguiſh the one kind from the other. Let them be particularly attentive to the manner of growth, the eyes, the foliage, the wood, and the branches; for theſe will exhibit differences that may be readily learned by obſerving, tho' the knowledge of theſe differences are not eaſily to be communicated by any deſcription. This will be eaſily underſtood by conſidering, that a Bergamot pear-tree is known at firſt ſight from another pear-tree any time of the year; ſo is a St. Germain, an Achan, a Virgoluſe: but this is not the caſe with ſome other kinds of trees, between which there are ſo near a likeneſs, that they are chiefly to be diſtinguiſhed from each other by the fruit which they bear.

Some grafted pear-trees do greatly reſemble wildings, and yet they produce delicious fruit: for inſtance, the Ambret pear-tree with thorns on the branches. I ſhall conclude by obſerving, that from among

among the ſtocks which we have raiſed from the ſeed for grafting on, thoſe that reſemble grafted trees the neareſt may be ſelected, planted in a nurſery by themſelves, and pruned in ſuch a manner as to bring them in a few years to a bearing ſtate. Whenever we have obtained the fruit, we ought carefully to examine it daily as it approaches to a ſtate of maturity; for we will only be able to judge of its goodneſs when it is perfectly ripe. If, on trial, it is found agreeable to our taſte, we may multiply the tree in the manner that has already been directed. If it is not equal in goodneſs to many kinds that we already poſſeſs, it may be turned out of our plans; for it will be labour loſt to cultivate the ground, and dreſs the tree for a bad kind of fruit.

I now proceed to make mention of the proper time for budding, and deſcribe the manner of performing it. This practice is very ancient; but when it was firſt found out, is impoſſible to be determined.

Many circumſtances recommend inoculation to the planter, as at leaſt equal, if not preferable, to grafting. Firſt, The agreeable ſeaſon in which the work is to be done,

done, the manner of performing it, its ſucceſs and influence on the health and bearing of the trees, as well as the facility with which we multiply the kinds on the ſame ſtock, or change them on others.

CHAP. VIII.

Of Budding.

BUDS are of two different kinds: firſt, ſuch as grow ſoon after the inſertion; ſecondly, thoſe that continue inactive till the enſuing ſpring. The former may very properly be called ſpringing buds, and the latter dormant buds.

SECT. I. The proper time for performing the work in ſpringing buds, is the beginning of June, or rather as early in the ſummer as the buds ſhall have acquired ſufficient ſtrength to be properly worked, and the ſap be found to run freely between the bark and the wood in the ſtocks; for the earlier that the eyes are inſerted, the ſooner do they grow, and conſequently become ſtronger before the approach of winter.

SECT. II. The fitteſt time for inſerting of the dormant bud, is in general the month of Auguſt, ſooner or later, according to the forwardneſs or backwardneſs of the ſeaſon; for if it were to be finiſhed too early in the ſeaſon, the ſpringing of the bud would render the operation in vain, as the ſhoot would certainly die before the next ſpring, and thereby diſappoint our expectation.

SECT. III. I would adviſe every gentleman in Scotland, or any northern climate, to prefer the dormant to the ſpringing bud; from the following conſiderations: This bud continues alive by its being united to the ſtock, tho' without puſhing, till the enſuing ſpring, when, after the ſtock is headed down in the month of April, it grows apace, and acquires conſiderable ſtrength before the approach of winter; ſo that it is thereby enabled to reſiſt the rigours of winter, and the hurtful colds of the following ſpring. Beſides the above, I may alſo take notice of the agreeable weather which generally prevails in the decline of the ſap, when the buds are to be inſerted, and the greater variety of

of proper buds that are then to be found on every kind of fruit-tree. Let me likewiſe add, that gum often deſtroys the buds in ſtone-fruit, when they are inſerted ſo early in the ſeaſon as to ſpring directly.

SECT. IV. The following preparations are neceſſary: Firſt, to free the ſtock from all lateral branches that come out below the part of the tree where the bud is to be placed, at leaſt a week before inoculating; this is to be done in both kinds of budding. After having finiſhed the operation of the ſpringing bud, head down the ſtock directly to within a few inches of the bud.

SECT. V. Take the buds in both kinds of inoculation, from a regular well formed wood-branch, and only chuſe ſuch as are ſingle, full, and vigorous: for ſhould you take them from fruit-branches, they would run a riſk of blowing and dying; and even when they ſurvive the bloſſoming, they commonly grow but poorly afterwards.

SECT. VI. In peaches and nectarines, &c. make choice of a bud with three eyes, which is proviſing at the ſame time

for both wood and fruit-branches in your future tree.

SECT. VII. In budding of pear and apple-trees, you may take a bud of the ſecond year's growth, which muſt be managed nearly in the ſame manner as buds of the firſt year's growth, only a larger portion of the wood is to be left in the inſide oppoſite to the bud. In whatever bud you obſerve a hole oppoſite to the eye, after you have ſeparated the wood from the inner bark, throw it away; for without ſome of the wood remain, there is ſmall chance of its ſucceeding. For it is more than probable, that buds from all kind of trees take beſt when the baſe of the wood is left equal to the inner ſurface of the bark; particularly in all kinds of ſtone-fruit.

SECT. VIII. We now come to deſcribe the manner in which inoculation is commonly performed with ſucceſs. Make choice of a ſmooth part on the bark of the ſtock, then cut through the bark, or as deep as the wood acroſs the ſtem, a little way above the place where you intend to put the bud; from the middle of this

tranſverſe

tranſverſe cut, make a ſlit perpendicular down the middle of the bark on the ſtock, of the ſame depth that has above been directed; carry it the proper length, that is, a little lower than the inſerted bud will reach: thus leave the ſtock till you have prepared the bud, which ſhould be done with all expedition.

SECT. IX. Take the eye from a wood-branch of a bearing tree; let it be the ſame year's growth in ſtone-fruit: the middle buds are generally to be preferred; for thoſe that are near the large end of the branch, have their wood too hard to be readily ſeparated from the internal part of the eye; and thoſe that are placed near to the top, are too ſoft to bear external injuries when budded; ſo that they commonly become dry, and rot without ſpringing.

The buds are to be prepared in the following manner: Cut through the bark into the wood of the branch, about a quarter of an inch, or a little more above the bud, and bring out the knife half an inch, or nearly ſo, below the bud; then raiſe the bark at the top with your nail from the wood, and ſeparate the wood gradually the whole length of the ſcyon. If after

the wood has been taken out, you obſerve a little of it remaining oppoſite to the eye, clap the leaf betwixt your lips, (for you muſt be careful to ſave the leaf while you prepare the germ) and raiſe the bark of the ſtock, beginning at the top of the perpendicular ſlit. Firſt raiſe one ſide the proper length, or a little lower than you expect that the bud will reach, when it ſhall be applied to the wood of the ſtock; then raiſe the bark of the other ſide in like manner, quickly inſert the prepared bud, ſlipping it down between the raiſed barks; and after it is fitly applied to the ſurface of the wood on the ſtock, then lap the bark over it on each ſide, ſo as to leave the eye uncovered. After this is done, tie it carefully either with woollen yarn or baſſes. The yarn is commonly preferred, as it yields to the ſwelling or increaſe of growth in the ſtock.

The method of inoculation that is above deſcribed, has been inverted with regard to the preparing of the ſtock; for ſome have made the tranſverſe ſlit below, and the perpendicular one carried directly upwards: the bud in this caſe muſt be thruſt up, keeping the top of the eye uppermoſt;

whereas in the other, the bud was ſlipped down, the eye being kept placed as above: the tying is alike in both.

SECT. X. Gardeners have adviſed us to untie it, at the end of two or three weeks; and after having looſened it, to tie it again in ſuch a manner, that it may gently preſs the bud; then they leave it till Michaelmas, when they untie carefully, and entirely remove the yarn or baſſes, taking care not to injure the bud while they are taking off the tyings.

SECT. XI. Leſt one bud ſhould fail, put two or more in every ſtock, not directly over one another, but rather in oppoſite ſides of the ſtocks, with a view to preſerve them from hurting each other; and alſo, that they may form the ſhape of the tree, if both buds ſhould ſucceed.

SECT. XII. Head down your ſtocks in April that were budded the preceding year; and if you are afraid that winds happening in the ſummer, or in autumn, may injure or blow off the young ſhoot or ſhoots of your bud from the ſtock, leave part of the ſtock remaining above the bud, to which the ſhoots may be faſtened for ſecurity. Nor will this management hurt

your tree; for the eminent part of the ſtock may be cut off the ſpring following, when your bud ſhall have acquired ſtrength; and by means of its firm union with the ſtock, will be able to reſiſt any impulſe of the winds.

SECT. XIII. Such trees as you intend to plant on walls, and rear as dwarfs, ought to be budded ſo low, that the firſt ſhoots or loweſt branches may be trained to the wall within half a foot, or eight inches of the ſurface of the ſoil. Other trees may be budded at the preciſe height that you intend to train them from, whether they be deſigned for half ſtandards, ſtandards, or riders.

SECT. XIV. In order to encourage the growth of the bud, or rather of the tree that is formed from it, you may convert all the efforts of nature to this particular purpoſe, by conſtantly keeping the ſtock free from buds, ſhoots, or ſuckers; and this is to be effected by rubbing of the firſt, breaking of the ſecond, and pulling up the third whenever they appear.

As the ſucceſs of the bud greatly depends on excluding of the air and moiſture from it, where it is applied to the ſtock, be

be ſure therefore to guard againſt theſe, in lapping of the bark of the ſtock over part of the bud, and faſtening of them both together to the ſtock.

Another method may alſo be reduced to practice, which we find recommended by the ancients. You may cut from the ſtock a piece of bark, equal in figure and ſize to the prepared bud; then apply the bud to the uncovered part, and tie it to the ſtock in ſuch a manner, as may exclude the air and moiſture, &c. This is called *emplaſtratio* by the ancient Romans.

Keep the ground in your nurſery clear from weeds, by labouring it frequently, which will greatly promote the growing of the buds.

I ſhall now add a few obſervations, that are chiefly taken from the works of the ancient writers of Greece and Rome.

SECT. XV. Theophraſtus, who was the diſciple of Plato and of Ariſtotle at Athens, and who continued to teach philoſophy in the ſchool of Ariſtotle after his death, has treated on this ſubject rather in the manner of a philoſopher, than of an obſerver. He aſſerts, that the prepared bud is moſt fitly joined to the eye of the ſtock, becauſe

becauſe nature has prepared a proper aliment for the inſerted germ in the eye of the ſtock. One is here almoſt tempted to pronounce this a piece of theory of the philoſopher's, when we find in experience, that this practice never ſucceeds; but to compenſate for the above aſſertion, he has communicated to us an uſeful truth, when he obſerves, that the leſs difference there is in the kinds of trees between the bud and ſtock, the more readily do they unite.

With regard to the time of inoculation, he ſays, that budding of ſtocks is performed about the vernal equinox, and in autumn about the dog days.

He aſſerts, that the time of inoculation which is preferred by ſome to the above, is about the riſing of Arcturus; becauſe, at that time, the bud as it were immediately takes root and coaleſces, and ſo becoming ſtrong, grows vigorouſly in ſpring from a more powerful principle.

The above inoculation is entirely different, both as to the time and the manner of performing it, from the kinds that I have made mention of. One would be almoſt here tempted to believe, that Theophraſtus means

means grafting, were it not for the climate of Attica, which may poſſibly have favoured the above practice of ineyeing.

SECT. XVI. Virgil ſeems to have taken his elegant deſcription of inoculation from that part of the book of Theophraſtus, which has been tranſlated in the preceding ſection. See his Georgics, b. ii. l. 74. I ſhall give it in Latin.

Nam quâ ſe medio trudunt de cortice gemmæ,
Et tenues rumpunt tunicas, angustus in ipſo
Fit nodo ſinus: huc alienâ ex arbore germen
Includunt, udaque docent inoleſcere libro.

Several of the moderns have inoculated on a gem in the ſame manner as is above deſcribed by the Grecian philoſopher and the Roman poet, tho' always without ſucceſs. Quintinye's words are, *J'ai pluſieurs fois eſſayés de faire de ces inoculations, et j'ai toujours perdu mon temps et ma peine.* Tom. ii. page 151. I have made trial of the ſame with no better ſucceſs.

SECT. XVII. Columella, who wrote not long after Virgil, deſcribes inoculation much after the manner in which he performed it, but confines the practice of it

it to the fig and olive tree.—See *Rei Ruſticæ Scriptores Geſneri*, vol. i. p. 848.

SECT. XVIII. Pliny the ſecond, who has collected into his Natural Hiſtory whatever preceding authors had written on this ſubject before his time, makes mention of two kinds of budding. *Inoculatio ſutoria ſimili fiſtula aperiendi in arbore oculum cortice exciſo, ſemenque includendi eadem fiſtula ſublatam ex alia. In ficis autem, et malis hæc fuit inoculatio antiqua. Emplaſtratio craſſo autem maximæ cortici convenit ſicut eſt ficis.* This is the ſame kind of budding that was deſcribed by Columella; and the deſcription of the manner of flute-grafting, that may be found in the next chapter, will convey a diſtinct idea to the Engliſh reader how this was performed. For tho' by the practice of the ancients the bud and bark was only applied to a part of the ſtock, and in that of the moderns it ſurrounds the whole; yet the manner of preparing the bark with the eye, and of applying it to the unbarked ſtock, is ſimilar in both. See *Plinii Opera Dalechampii*, page 424, and *Cato Rei Ruſtic. Scriptor.*

SECT. XIX. Columella's deſcription of the

the method according to which it is to be performed, is accurate and proper. *Arboris, quam Emplaſtrus es, nitidiſſimum ramum elegito, et ejuſdem ſpatii corticem circumcidito, et materiam delibrato. Deinde in eam partem quam nudaveris, preparatam emplaſtrum adaptato, ita ut alteræ delibratæ parti conveniat.*

SECT. XX. The nurſerymen have of late years introduced the practice of rebudding ſuch trees as had formerly taken from inoculation, and were become vigorous. This they call double working of the tree, and aſſert, that it brings the tree ſooner to bear, and makes it afterwards bear better. The reaſon of the above aſſertion may be gueſſed at by the ingenious, when they are informed, that theſe trees are commonly ſold at a higher price. With regard to the article of bearing, it muſt be very difficult, if not impoſſible, to determine the point from experience: probability is againſt it; and gentlemen ſhould beware of adopting prejudices, which it is the intereſt of gardeners to impoſe.

It is now propoſed to deſcribe the various ways of grafting, and to take notice of a few of the advantages and diſadvantages that

that attend the tree, when it is performed in each of the different manners that are, or may be put in practice; for it will be no difficult matter to perform any of the kinds that ſhall be directed; and let the reader chooſe for himſelf which method he prefers, after he has peruſed the whole.

CHAP. IX.

Of ſeveral different Methods of Grafting.

THE kinds of grafting that I ſhall deſcribe in the ſeveral articles are: 1ſt, Cleft-grafting; 2d, Whip-grafting; 3d, Side-grafting; 4th, Cheek-grafting; 5th, Grafting in the bark; 6th, Flute-grafting; 7th, Grafting in the wood, as in the Worceſter way; 8th and laſt, Grafting by approach.

ARTICLE I.

Of Cleft-Grafting.

THE proper time for grafting of fruit-trees in the cleft, is in the months of February and March, or even in April, when the

the growth of the trees is retarded in ſpring by a cold ſeaſon.

SECT. I. Stone-fruit ſhould be firſt grafted, then pears, and laſt of all apples. Apples commonly ſucceed better when they are grafted in the beginning of April, than when they are earlier worked.

SECT. II. This kind of grafting may be put in practice on ſtocks of all ſizes, tho' it will prove moſt ſucceſsful on ſuch as are not too large. It is to be performed in the following manner.

SECT. III. Where you obſerve the bark to be clean and ſmooth, there head down the ſtock, cut ſloping through one half of the head, and pare ſmooth the other half horizontally; then with a ſmall knife ſo placed that it may cut at once thro' the middle of both ſurfaces, give it a gentle blow on the back, that it may cleave the ſtock directly downwards for an inch long, more or leſs, according to the thickneſs and length, or thinneſs and ſhortneſs of the prepared part of the graft.

SECT. IV. Take your grafts from well-bearing trees; branches of one year's growth are commonly uſed, tho' thoſe of two may be grafted with equal ſucceſs, provid-

provided the eyes are not flower-buds. Such branches of one year as have their eyes prominent, and placed the neareſt to one another, if in other reſpects equal, are the fitteſt. Four eyes are generally reckoned ſufficient for the imp, tho' there is no reaſon for being over-ſcrupulous with regard to the number. Having taken your graft from the tree, be ſure that the bark be free from blemiſh, regular, and ſmooth: cut through the bark into the wood on each ſide of the graft, ſo as to form a notch or ſhoulder on each ſide that are nearly equal on the oppoſite ſides, and on the ſame plan, as both of them ſhould reſt on the ſmooth ſurface on the top of the ſtock: leave one eye above, oppoſite to the middle of the wood that is to remain; then cut down each ſide, ſloping equally, till this part of the imp reſembles a wedge with a ſharp point; open the ſlit you formerly made on the ſtock, and ſlip down the graft to the ſhoulders. This is eaſieſt done when you have thinned the edge of the graft that is to be inſerted into the wood of the ſtock, a little more than the oppoſite ſide that is to be joined to the bark of it; join the bark of the graft and

ſtock

ſtock the whole length of the inſertion; and it is of advantage, when the woods of both are properly fitted to each other.

SECT. V. The ſucceſs of your grafting will be doubtful, when you raiſe the bark of either ſtock or graft in the inſertion, or in the preparing. Cover the part where they are joined with green bark, or any thing elſe, in ſuch a manner as to exclude the air and wet; tie the ſtock pretty tight with baſſes, ruſhes, or woollen yarn; and clay it over, taking care not to cover the eyes of the graft.

SECT. VI. I have frequently made uſe of grafting-wax, prepared according to the receipt in Mr. Miller's Dictionary; nor did it fruſtrate my expectations: but the trouble that there is in keeping of it properly warmed while it is to be applied, with the difficulty of removing it when the graft is grown to a proper length, will poſſibly prevent its coming into common uſe. Clay is applied with greater expedition; and when it is properly prepared, ſerves the purpoſes of the gardener equally well.

Thus your grafted trees may continue till the eyes have puſhed out branches of a conſiderable length, when it will be pro-

per to take off the clay, and free the ſtock from the tyings.

SECT. VII. The grafts will advance but poorly, if the ſtocks are not conſtantly kept free from buds, ſuckers, or ſhoots. Should you in preparing cut the inſerted part of the graft too thin at the ſhoulders, it is apt to be broken over by the wind at the ſtock, whenever it becomes branchy.

SECT. VIII. If any planter ſhould incline to uſe the grafting-wax, notwithſtanding the trouble of applying it, &c. I would adviſe him to tie with baſſes rather than woollen-yarn; for it is difficult to take off the yarn from the ſtock, after the wax has been melted with the heat of the ſun, and has been mixed with the yarn even to the ſtock. When the ſtocks are ſmall, they may be cut ſmooth in the top, and then cleft, and the grafts for ſuch may be made without any ſhoulders.

SECT. IX. When ſtone-fruit are grafted in this manner, they take not ſo readily as grafts from apple and pear trees do, even tho' they are worked with the greateſt care: moſt kinds of the trees that bear ſtone-fruit, generally ſucceed better from cheek-grafting.

SECT.

SECT. X. From the place where the ſlit is made in the ſtock, a piece of the wood and bark may be taken out from each ſide, by cuts ſlanting upwards: and the grafts for ſuch may be formed into the ſhape of a wedge without ſhouldering, and ſo properly fitted as to touch in every part with the internal ſurface of the ſtock. When trees thus grafted take, they become ſooner ſtrong, as the union is completer from the grafting; but they are more troubleſome in the working, and require more time in performing the operation. This manner the French writers call *greffer à l'emporte piece.*

SECT. XI. It is alſo done by cutting out part of the ſtock with a chiſſel, and fiting the graft in ſuch a manner, as that the matter, when it ſhall be produced from the inner barks, and the wood of both, can eaſily unite them. It matters not of what ſhape the pieces taken from the ſtock be; for provided the graft is ſo ſhaped, as to be properly fitted with the inner bark and wood of the ſtock; that is, if their prepared ſurfaces be in contact, or exactly joined together; you may certainly reckon on ſucceſs.

SECT. XII. When the weather is cold, you may prepare your grafts, of whatever kind they are, by the fire-ſide; and as you finiſh them put them into a veſſel with water, where they may lie ſoaking, till you join them to the ſtocks. This probably promotes their taking readily with the ſtocks; for I have often experienced that they ſucceed well after ſuch management.

SECT. XIII. When the ſtock is large, ſeveral clefts may be made in it, all of them directed to the center, and one graft inſerted into each. When they are thus placed round the top of the ſtock, it is called crown-grafting, from its reſemblance to a crown, as the gardeners have fancied.

SECT. XIV. It has been obſerved, that the ſhoots which ſpring from the grafts after they are joined to the ſtocks, grow in the ſame direction as they did on the trees from whence they were taken; that is, either perpendicular or horizontal. As this obſervation was firſt made by the author of the Solitary Gardener, if you credit the obſervation, when you have it in your power, you may make choice of upright grow-

growing grafts for ſuch ſtandard-trees as are deſigned to be placed in the open air.

ARTICLE II.

Of Whip-Grafting.

THIS is ſo called, becauſe the ſtock and graft are joined together in the manner of a carter's whip, or of a fiſhing-rod: this method ſucceeds beſt, when the graft is in ſize or thickneſs equal to the ſtock, or nearly ſo. It may be performed in the following manner:

SECT. I. The ſurface of the graft and ſtock are to be cut ſloping, in ſuch a manner that they can be applied exactly to one another. When, on applying them mutually, their ſurfaces are found to anſwer, and their barks are nearly joined, keep them ſteadily in the ſame poſition; and tying them carefully with baſſes or woollen-yarn, let them be clayed or waxed over. When both are ſlit tranſverſely a little in the middle of their prepared ſurfaces, and indented into each other, it helps their joining, and ſecures them from being hurt by the winds, &c. Such trees as have

been whip-grafted, ought to remain longer tied than thoſe that have been cleft-grafted, leſt they be disjoined by accidents while the union is incomplete, and the cementing ſubſtance ſoft and yielding.

SECT. II. This method of grafting is attended with great ſucceſs; for the graft and ſtock ſoon coaleſce, and by means of this make good trees, as they thrive ſo vigorouſly, that in a few years it is impoſſible to perceive the part where they were united.

SECT. III. The reader will eaſily perceive, that whip-grafting can only be put in practice on young ſtocks, or ſmall branches of trees, when we incline to multiply different kinds of fruit on the ſame tree.

ARTICLE III.

Of Side-Grafting.

THIS is done in a manner much reſembling whip-grafting. The tree is not headed down, but the grafts are ſtuck into it in ſuch a manner, as can beſt ſupply the vacancies that are found in the head of the tree.

tree. No particular directions can be given for the performing of this work; but the grafter may conſider with himſelf in what manner he would chooſe that the grafts ſhould ſhoot, and ſo apply them in a proper direction for anſwering his purpoſe, and then inſert them in ſuch a way as that the two barks and wood may be contiguous; for this will ſecure their uniting, provided they be ſo covered as to deny all acceſs to wind and rain.

ARTICLE IV.

Of Cheek-Grafting.

THIS is ſo named from the poſition of the graft; for it occupies one ſide of the head of the ſtock, and reſts on the top of it.

SECT. I. The proper time for performing of this work in Scotland, is in the month of April, or even in the beginning of May when the ſeaſon is later: in more ſoutherly climates, it may be performed more early. It is the eaſieſt performed, and ſooneſt finiſhed, of any method. Stone-fruits ſucceed equally well when they are

grafted in this manner, as thoſe do that belong to the claſs of pippins. It may be done according to the following directions.

SECT. II. Cut the ſtock over horizontally; then, after having pared its top ſmooth with a ſharp pen-knife, you cut a ſlice from the ſide of the ſtock, in ſuch a manner, that a gradual ſlope is made from its firſt entry into the bark, till it come out ſome way within the wood on the top, more or leſs, as you ſhall incline.

SECT. III. The preparation of the ſtock being finiſhed, you take a graft with four or more eyes on it: cut into this on the ſide that is oppoſite to the loweſt bud, a little through part of the wood, and make a ſhoulder; then ſlope it down gradually the length required, or till it reach near to the lower part of the ſurface from whence the ſlice of the ſtock was taken. Fit the graft ſo prepared to the cheek of the ſtock where the piece was taken off; let its ſhoulder reſt on the top; then tie it tight with baſſes or ruſhes, and clay it over the top, and all round.

SECT. IV. I can here aſſert from experience, that it is not neceſſary for the bark of the graft and ſtock to be joined in order

order to its ſucceeding; for they often take when the grafts are only applied to the wood of the ſtock, even when the ſurface of the bark on the graft does not reach the length of the inner bark of the ſtock; tho' the contrary of this has been aſſerted by ſome philoſophical reaſoners on the ſubject. But without retailing the prejudices of preceding writers on the ſubject, we ſhall obſerve, that the ſubſtance which unites them together, proceeds both from the inner bark and the wood of the ſtock, as well as the graft; and that the ſubſtance from each gradually increaſes till they come to unite, and ſo form a ſimilar ſubſtance, that for ſome time not a little reſembles the callus which is formed between the ends, and unites the broken bones of animals; but it ſoon changes its appearance, and is converted into real wood and bark, which partakes of the nature of both the ſtock and graft, proving a connecting medium through which the juices paſs and repaſs without interruption: it alſo receives its proper nutriment, and increaſes along with the tree.

SECT. V. But as the tree is not ſtrong for ſome time after the formation of this ſubſtance,

ſubſtance, it is proper to continue the tyings for ſeveral months, or as long as the leaves are on the treee, leſt the grafts be blown off by the wind. This I have ſeen happen after the tree had been tranſplanted ſeveral years; but the ſtock had been too large before grafting, and was not covered by the increaſe of the graft, for which reaſon it had begun to rot from the wet.

SECT. VI. Where your nurſery is expoſed to the wind, it may be of ſome uſe to place the grafts on the ſouth-weſt ſides of the ſtocks, as the higheſt winds ordinarily blow from that quarter. Moſt kind of fruit-trees take very readily when they are grafted in this manner; and if the ſtocks are not too large, the grafts ſoon cover them, the trees thrive, and bear equally well as the ſame kinds when grafted in any other way.

SECT. VII. In grafting of ſtone-fruit, as plums, &c. it may prove of conſiderable uſe, in heading down the ſtocks, to cut them ſlanting upwards, nearly in the manner as when you prepare them for whip-grafting: then by a little further labour, cut off from the ſtock a ſlice, ending above the undermoſt part of the ſlope, as it was left

left after heading down the ſtock; to this apply a graft made without ſhouldering: tie and clay or wax it carefully all over.

SECT. VIII. The ſlope of the ſtock may be made pretty long, as the graft, after its ſhoots are conſiderably advanced, may be tied to this, in order to preſerve it from the violence of winds, till the union is thoroughly completed, and the cement is become hard and ſtrong, when the eminent part may be cut off, as has already been directed when treating on the ſpringing bud.

ARTICLE V.

Of Grafting in the Bark.

THE head of the ſtock is to be taken off, and the crown pared ſmooth, as in cheek-grafting. Let the bark be raiſed from the wood of the ſtock, ſo far as to receive the graft, which is to be prepared in the manner that I have already made mention of in Art. IV. Sect. III. of this chapter. The graft being thruſt down, is to be tied to the ſtock in the ſame manner as in cheek-grafting, and ſo clayed over. But the objections of its being in danger of ſuffering

fering damage from winds, are ſtronger here than in cheek-grafting, as the union is leſs perfect, and conſequently the tree is weaker for a conſiderable time.

SECT. I. After the bark is raiſed, or even before, a ſmall part of the wood may be cut off from the ſtock by a ſmall chiſſel made for the purpoſe, which will make the graft ſit eaſier, and unite ſooner.

SECT. II. This method of grafting is ſaid to be the moſt ancient by Pliny: for according to him, the ancients were at firſt afraid of making a cleft in the ſtock. See *Opera*, 422, 440. Who the naturaliſt here means by the ancients, is not eaſy to be determined; for cleft-grafting is deſcribed in the works of Theophraſtus. See page 205 of Heinſius's edition.

ARTICLE VI.

Of Flute-Grafting.

THIS is at preſent chiefly uſed for multiplying of walnut-trees. The ſtock which is to be grafted, and the branch from which the bark with the buds is to be taken, muſt be nearly of the ſame ſize,

as

as they are to be fitted to each other. The bark, taken off in form of a virle, muſt have one or two buds. This is to be taken from the tree that we intend to multiply, and placed upon a ſtock diſbarked ſo as juſt to receive it. When it is properly fitted on, clay it on the top, and round the joined barks, ſo as to defend it from wind and rain; and keep the joinings carefully covered till the barks unite together, and the graft coaleſce with the ſtock.

ARTICLE VII.

Of the Worceſter Way.

THIS is done by inſerting a large branch into the trunk of a tree cut down on purpoſe: it is to be placed between the bark and the trunk, after ſticking grafts round the trunk. See SWITZER on Fruit-trees, who has deſcribed this in a very confuſed manner.

The inſerting large ſcyons into the wood of ſtocks, ſeems to have been practiſed by the ancients; but notwithſtanding the practice of both ancients and moderns, I can-

I cannot help declaring in favour of cheek-grafting, as preferable to the above method.

ARTICLE VIII.

Of Grafting by Approach.

THE manner in which this is performed, is by putting the growing branch of any kind of tree that we incline, into the cleft of a ſtock that has been headed down and prepared for its reception: there it is to be tied in ſuch a manner, that by the nearneſs of the barks and woods, it may ſoon unite with the ſtock. Clay it over carefully, ſo as to exclude air and wet; and after it has continued for one or more years, and is united to the ſtock, the branch may be cut off from the parent-tree near to its union with the ſtock.

Gardeners declare that fruit-trees thus propagated, are greatly better than thoſe that have been budded or grafted in any other way. Unluckily, probability declares this to be a groundleſs aſſertion; and if we appeal to Reaſon, whether or not this is really ſo, ſhe perſuades us, that it is impoſſible

impoſſible to determine the point from experience. In the above method it is practiſed by the moderns; let us now conſult the works of the ancients for information.

SECT. I. Columella has claimed this manner of grafting as his own invention; and aſſerts, that when they are joined in this way, all kind of trees will take mutually. He gives an inſtance in the fig-tree and olive, which he ſays takes three years to unite. But that the reader may be able to judge for himſelf, I ſhall quote a few paſſages in the original language, leſt he ſhould ſuſpect the faithfulneſs of a tranſlation.

Sed cum antiqui negaverint poſſe omne genus ſurculorum in omnem arborem inſeri, et illam quaſi finitionem, quâ nos paullo ante uſi ſumus, veluti quandam legem ſanxerint, eos tantum ſurculos poſſe coaleſcere, qui ſint cortice, ac libro, et fructu conſimiles iis arboribus, quibus inſeruntur; exiſtimavimus errorum hujus opinionis diſcutiendum, tradendumque poſteris rationem, quâ poſſit omne genus ſurculi omni generi arboris inſeri. And he adds below, *Sic interpoſito triennio convaleſcit ficus cum oleo.* COLUMELLA, *Rei Ruſticæ Scriptores*, vol. I. page 564.

SECT.

SECT. II. In another part of his book, after having deſcribed ſeveral other ways of grafting, he adds the above, and ſays, *Alium methodum à nobis repertum docebimus*, vol. I. page 847. To this Pliny gives his aſſent: *Mihi ſatis certè comperta. Oper.* 427. Had a certain writer of conſiderable reputation attended to this, and made experiments, he would not have ſo ſeverely criticiſed the ancients in general, and Virgil in particular, where the poet ſays, Georg. ii. l. 69.

Inſeritur verò ex fœtu nucis arbutus horrida;
Et ſteriles platani malos geſſere valentes,
Caſtaneæ fagos, ornuſque incanuit albo
Flore pyri; glandemque ſues fregêre ſub ulmis.

SECT. III. The teſtimony of Pliny is remarkable in favour of the practice of the ancients. *Tot modis inſitam arborem vidimus juxta tiburtas tulias, omni genere pomorum onuſtam, alio ramo nucibus, alio baccis, aliunde vite, ficis, pyris, punicis, malorumque generibus. Sed huic vita brevis fuit. Opera*, page 424.

SECT.

SECT. IV. Let me alſo adduce in favour of Virgil what Pliny has aſſerted, tho' his authority has been called in queſtion, that the Platanus, or plane-tree, joined with the graft the readieſt of any ſtock; next to it is the oak, but both ſpoil the taſte of the fruit. Figs and pomegranates, according to him, are grafted on all kinds of ſtocks, *Oper.* 424; neither is it to be doubted, but that Virgil had heard of from good authority, or ſeen theſe kinds of union which he has made mention of. It is more than probable, that the following changes were frequent, and conſiſted with the poet's knowledge, Georg. ii. l. 32, though we have often attempted them without ſucceſs.

Et ſæpè alterius ramos impunè videmus
Vertere in alterius, mutatamque inſita mala
Ferre pyrum, et prunis lapidoſa rubeſcere corna.

SECT. V. But to what purpoſe, ſay my opponents, is it to adduce the authority of Virgil, when Seneca has aſſerted, and others ſince his time have given it as their opinion, that Virgil did not intend to convey inſtruction in his Georgics, but to

compoſe an agreeable poem? In anſwer to the above, I can luckily oppoſe the declaration of Virgil himſelf, when he is addreſſing his patron Mæcenas: there he ſays,

——*Non hic te carmine ficto,*
Atque per ambages, et longa exorſa tenebo.
Georg. ii. 45.

SECT. VI. It is evidently the character of Virgil, that he was fond of truth, tho' he embelliſhed it with fiction: and can any reaſonable man believe, that a poet remarkable for judgment, would impoſe a falſhood on ſo great a prince as Auguſtus, or ſo knowing a court and age as that was in which he lived? The poetic licence was never extended ſo far; for tho' the ornaments of Virgil's Georgics are greatly heightened by fancy, yet his maxims are not without foundation. But to convince any one of the miſtakes of Seneca, and every other critic who has joined in the accuſation, let him only peruſe with attention the Georgics, where he will find much uſeful knowledge on every ſubject that is treated of by the poet. Thus far have I wandered from my ſubject, led

aſtray

aſtray by a fondneſs for the works of the ancients, and in order to vindicate them from the cenſures of many writers, who have ſtolen from them, without any acknowledgement, ſeveral uſeful obſervations on this ſubject; and who have, at the ſame time, inconſiderately adopted their miſtakes, and delivered them as certain maxims.

SECT. VII. It is now proper to offer the reader a determination of the matter, which deciſion appears to be not ill founded: That to purſue theſe experiments may prove a pleaſant amuſement to the curious in nature, but can be of little uſe to the planter, whoſe ſole aim is to obtain fruit-trees of good kinds, that may grow vigorouſly and bear well.

Repeated experience has confirmed the truth of the following obſervation, that the kinds of ſtocks I have directed to be uſed, join readily with the buds and grafts, and the trees ſo reared bear plentifully. And tho' pear-trees not only grow, but bear well on the following ſtocks, crab-apples, wild-aſh, white-thorn, medlar, and ronce-tree; yet it would be ill-judged to graft on theſe, when the ſucceſs is not ſo

certain, nor the goodneſs of the fruit ſo well aſcertained by accurate obſervations, as both are from obſervations that have been made when they were grafted on pear and quince ſtocks.

SECT. VIII. It may contribute to the underſtanding of my meaning to take notice, that under the name of dwarfs, I include all trees that are trained in ſuch a manner as to branch out near the ſurface of the ſoil, and not ſuch fruit-trees as are grafted on quince or paradiſe ſtocks, &c. In this ſenſe I have often made uſe of the expreſſion, when I had occaſion to make mention of them formerly. I ſhall now add a few uſeful directions to the planter in the remaining ſections, and conclude with the theory of grafting and budding.

SECT. IX. The trees that you intend to plant as dwarfs in the open air, or on eſpaliers, may be budded or grafted from four to eight inches from the ground.

SECT. X. Such as you deſign for dwarfs on walls, ſhould be budded or grafted within four or five inches of the ſurface of the ſoil in the nurſery.

SECT. XI. Half-ſtandards may be worked from three to five feet high, or grafted

grafted as dwarfs, and trained to the proper height.

SECT. XII. Standard-trees that are intended to be planted on walls, may be budded or grafted at the height which you propoſe to train the branches from, as this will moderate their growth and promote their bearing.

SECT. XIII. Pear-trees that you intend to plant as ſtandards in orchards, ſhould be grafted low on wild pear-ſtocks, and trained by pruning to the proper height that you incline they ſhall branch out at.

SECT. XIV. Where the ſoil and ſituation of the nurſery is good, and the ſtocks grow very vigorouſly, they may be budded or grafted ſix feet high, and will make good ſtandard-trees.

SECT. XV. Such pear-trees as you intend for riders on walls, may be grafted at the height the wall requires, or anſwerable to the part of the wall where you are to place the firſt branches at, in training of their heads to the wall.

SECT. XVI. Apple-trees that are intended for orchards, may be grafted on the true wild crab, which is firmer in the wood, and has more thorns on the bran-

ches, than any other kind: theſe may be grafted and managed as has been directed for pear-trees.

SECT. XVII. Plums that are intended for half-ſtandards, may be budded four feet high, and ſtandards at the height of ſix feet, as this will prevent the trees from growing too much to wood, and diſpoſe them to bear ſooner.

SECT. XVIII. Cherries may be managed as plums. To narrate more particulars would prove tedious; ſo we ſhall now offer a few obſervations that are deduced from what we have obſerved in the courſe of grafting and budding, as it may help the reader to form ſome idea of the efforts of nature, by means of which the union is begun and completed, and the ſtock becomes a perfect tree, when it is joined to the growing bud or graft.

THE

THEORY

OF

BUDDING AND GRAFTING.

IT is found to hold in experience, that the cementing ſubſtance in both ſurfaces is firſt produced like little grains: theſe ariſe ſoon after the junction, from the ſubſtance of the inner bark of the ſtock, in moſt kinds of grafting; but from the ſurface of the wood in inoculation and grafting in the bark. They are likewiſe produced from any part of a tranſverſe or oblique ſection of the wood of the ſtock, provided it be defended againſt all approaches of the air: for when the grains firſt make their appearance, the matter is liquid, and eaſily evaporates; and the parts from whence it was diſſipated, become too hard to admit of any more being depoſited. Hence the buds by degrees turn arid, and the grafts wither; the prepared part of

the ſtock alſo acquires too much rigidity, by means of which it dies down in part. This is the real cauſe of the death of many budded and grafted trees.

When too much wet is admitted, it liquifies the grains; or when it is long retained on the ſurfaces, the perſpiration is ſtopt, the motion of the ſap retarded, the liquids corrupt, and by their bad qualities hurt the ſolids ſo much, that no cement can be formed and depoſited: both the buds and grafts dwindle gradually, die, and rot, and part of the ſtock alſo ſuffers from the adjoining putrefaction.

The heat of the ſun, that ſo powerfully influences vegetation, when it comes to act with too great an increaſed force, will accelerate the perſpiration of both buds and grafts, and endanger their lives from drying their ſubſtance too much: but this may be prevented by frequent waterings, or forming an artificial ſhade, that may be ſo placed as to ſcreen them from the mid-day ſun.

Cold, or the particles of froſt, on the contrary, have oppoſite effects; for they much diminiſh perſpiration, and thereby retard the growth of the trees: but when they

they are copious, and act intenſely, they inſinuate themſelves into the ſubſtance, dilate the juices, burſt the ſolids; and ſo by deſtroying their texture, they occaſion the death of the parts that are injured.

Having made mention of the earlieſt appearances, when the efforts of nature, or the vegetative power, firſt begins to form the union of ſtocks with buds and grafts; and alſo taken notice of the cauſes which prevent its progreſs, or counteract its efforts, ſo as to diſappoint the planter; it now remains to conſider its progreſs till the union be completed, and the tree perfect of the kind which we intended.

Suppoſe now, that our budded and grafted trees have had their joinings and tops carefully covered, in ſuch a manner as to defend them from being injured by the air, by wet, by heat, or by cold; nature proceeds without interruption in her proceſs; granulations are accumulated, as well on the ſurface of the ſtock, as on that of the bud and of the graft; the matter is as yet ſoft, and only ſhaped by the confining ſurfaces, that ſet limits to its extenſion; thus it continues for a conſiderable time, diſcovering nothing of the properties

of

of wood: but from its being expoſed to the action of the mounting and deſcending ſap, it is penetrated through its ſubſtance, and preſſed into a ſimilar form with the wood below and above it. Thus having become pervious, and eaſily admitting the juices, in whatever direction they are impelled, it is inſenſibly formed and hardened by their action, and receives an increaſe from the nouriſhing particles which they bring and depoſite. Nor can we with any propriety ſolely attribute this effect to the power of vegetation in the ſtocks; for we find, that both buds and grafts, when they take to growing, always look healthy; and by imbibing nutriment from the atmoſphere, they not only maintain their vigour, but alſo prepare the granulated ſubſtance that they depoſite in the interſtices, till there is ſufficient of cement to be gradually moulded into a wood and bark ſimilar to their own: and this being joined to what is produced from the ſtock, conſtitutes the connecting medium, which may in ſome manner be ſaid to form the tree, by admitting the nouriſhment that is now copiouſly drawn from the roots to the new ſpringing ſhoots; for they puſhing apace annually, enlarge the

the tree by the production of wood and bearing branches.

The planter having now obtained a tree of the kind he wanted, may reckon on fruit of the ſame kind with that of the tree from which the bud or graft was taken. For whatever has been aſſerted by the writers on gardening, with regard to the influence of ſtocks on the fruit of the trees that have been reared in the manner we have directed in the preceding pages, may be conſidered as but indifferently founded; for as the difficulty is great in judging, ſo the obſervers may have been miſtaken. However, leſt our readers ſhould accuſe us of partiality in favour of our own obſervations, we ſhall offer them the experiences of a veteran in planting and obſerving: it is no leſs a perſon than Monſieur Du Hamel, well known to the learned world by the numerous obſervations and experiments which he has made and communicated to the public in his various writings.

He has aſſerted in his *Phyſique des Arbres*, that graſted fruit always continue the ſame, no matter on what ſtocks they are grafted.

I ſhall offer a few of his experiences in the language of the author.

J'ai

J'ai greffé la reine Claude ſur l'amandier, ſur le pecher, et ſur le prunier de damas, &c. Quoique la ſeve de ces trois arbres ſoit différente, j'ai eu ſur ces différentes ſujets la même eſpece de prune. On greffe tous les jours le pecher ſur les pechers ſauvageons, ſur des amandiers, et ſur différentes eſpeces de pruniers, ſans qu'on apperçoive aucun changement dans les eſpeces.

L'amandier greffé ſur les pruniers, m'a donné des amandes aſſez ſemblables à celles que produiſoit l'arbre qui avoit fourni la greffe.

J'ai greffé une même eſpece de poirier ſur le poirier ſauvageon, ſur le coignaſſier, ſur l'épine, et ſur le neflier, ſans avoir eu de changement dans les fruits. La groſſe nefle greffé ſur le neflier de bois, ſur le coignaſſier, et ſur l'épine blanche, et reſte la même. This he farther proved by grafting a new-ſet lemon on an orange tree by approach: and tho' the lemon-tree was ſoon after joined to the ſtock of the orange, the fruit acquired its maturity, and partook nothing of the nature of the orange. DU HAMEL, *Phyſique des Arbres*, ii. 497.

We ſhall further proceed to entertain the reader with the experiences of this author, tho' they are not immediately connected with the preceding ſubject. He tried.

tried many of the kinds of grafts ſo much boaſted of; as the vine on the hazel, the peach on willows, &c. without ſucceſs. Theſe he reckons as conveyed by writers on the authority of others, and aſſerts that they are falſe; as a plum grafted on a quince, which had only one pippin, by M. Lemery, M. A. S. 1704; and he treats with no leſs ceremony the obſervation of the Reverend Mr. Hales, of the holly that was tinged below the variegated bud, p. 98. I ſhall now collect, for the ſake of my reader, ſome obſervations of greater utility, and communicate them in the language of the author. *J'ai connu un poirier de livre greffé ſur l'épine blanche, qui fait un joli demi-vante, et qui donne beaucoup de fruit. J'ai vu à Galiſſoniere des virgolouſes, et d'autres eſpeces de poires, qui donnoient difficilement du fruit, leſquelles en ont fournis aſſez promptement lorſqu'on les a greffées ſur l'épine blanche; l'épine blanche peut tenir les poiriers nains, et peut donner beaucoup des fruits très gros dans un terrein humide, mais point du tout dans un terrein ſec.* DU HAMEL, Phyſique des Arbres, ii. p. 94.

Nous avons conſervé, pendant plus de vingt ans, dans un terre groſſe, des pruniers

de

de reine Claude, que nous avions fait greffer ſur des pecher de noyau; ces greffes n'ont pas beaucoup pouſſé en bois; mais elles ont donné beaucoup de bon fruit: les pechers du noyau ne durent pas long temps; mais quant ils ſont greffer, ils durent plus long temps. Idem, ii. 92.

Almonds were budded in Auguſt on the black damaſk-plum; few ſucceeded; two remained in the nurſery, and gave much good fruit for many years. Ibid. page 89.

Having finiſhed the firſt part of this ſubject, I ſhall conſider the fruit-garden, and endeavour to inſtruct the reader in what manner fruit-trees may be diſpoſed of to the greateſt advantage, ſo as that they may prove agreeable in our plans, and become profitable by the fruit which they yield in the returning ſeaſons. And as my firſt book has been chiefly employed in giving of proper directions with regard to the rearing of fruit-trees, ſo the next ſhall be chiefly confined to informing of my readers, how they may plant, prune, and manage fruit-trees, till they ſhall come to bear; and how they ſhall afterwards treat them when they are in a bearing ſtate.

THE

THE FRUIT-GARDENER.

BOOK THE SECOND.

INTRODUCTION.

MIGHT I here venture to offer a few hints to ſuch gentlemen of fortune as have genius and taſte for laying out gardens *à la grande maniere*, or on an extenſive plan; were this permitted, I would in the firſt place obſerve, that fruit-trees may be introduced into theſe as ornaments; nor will their utility, I hope, prove any objection to the putting of my propoſals in practice.

SECT. I. Properly ranged according to the ſeveral heights they arrive at, they may be formed into amphitheatres, placed in clumps, or diſpoſed in verges.

SECT. II. Single rows may appear to advantage where the plan ſhall require them.

SECT. III. Avenues intended to confine the ſight to ſome agreeable termination, may be compoſed of fruit-trees.

SECT. IV. A ſingle pear-tree placed with taſte, will make a fine appearance by its ſtraight ſtem below, and its aſpiring conical figure above.

SECT. V. The round and wide-ſpreading head of an apple-tree, may appear a very decent ornament in ſome ſituations.

SECT. VI. Different kinds of fruit-trees may be planted with flowering-trees, or admitted into cabinets of flowering-ſhrubs.

SECT. VII. Even the pleaſure we receive from the flower-garden, may be heightened by mixing dwarf apple-trees, &c. with the beds, or ſcroll-work, which will diverſify the ſcene and increaſe the beauty.

SECT. VIII. Standards, or half-ſtandards, dropt on carpet-ground, will have a fine effect.

SECT. IX. Were they to be planted in walks, their opaque ſhades would prove very agreeable in ſummer.

SECT. X. So pliant are many kinds of fruit-trees, that we may form them into delightful arbours. Whatever purpoſe you ſhall intend them for, always make choice of healthy and vigorous kinds, the ſight of ſuch is ever pleaſing; an ill-thriving tree

is diſagreeable to the ſight, however it is placed. But it is needleſs to purſue this ſubject farther; few of my readers are bleſt with either ſuch fortunes or taſte as is required for theſe great undertakings.

SECT. XI. Many people poſſeſs gardens; and that garden muſt be very ſmall, which cannot admit of one or more fruit-trees, particularly ſmall dwarfs, ſuch as apples on paradiſe-ſtocks, or pears on quinces: theſe require but little room, ſcarce any pruning, ſoon come to bear, and generally hold well, or are conſtant bearers. Such trees are proper for city-gardens that are ſmall; ſuch as are large may be planted with trees on free-ſtocks, and trained as the owner pleaſes.

SECT. XII. I cannot help here obſerving, that tho' trees planted in the atmoſphere of a town thrive and bear well, yet the fruit, tho' large and well-looking, have but an unpleaſant taſte, and little flavour. Need we be ſurpriſed at this, when we conſider how the air is conſtantly tainted with the matter perſpired from animal bodies, with putrid exhalations from many ſubſtances that it would be diſagreeable even to name, the ſmoak of chimnies,

duſt, &c. whereas ſuch fruit as grow in the country, are entertained with combinations of the pure elements, free from every thing noxious or offenſive. Hence are we to derive their exalted reliſhes and delightful flavours, that far exceed any artificial compoſitions.

Before I treat of the fruit-garden, I may obſerve, that tho' it is the pleaſanteſt way of having fruit, yet it is neither the eaſieſt, nor moſt profitable. But as every ſhape to be found in a fruit-garden, may be ſaid to be of our own forming, and the whole conſidered as a creature of art; it affords us more pleaſure, by being the reſult of our ſkill, and often ſubjected to our contemplations.

CHAP.

CHAP. I.

Of the Fruit-Garden, of Walls in general, and of Brick-Walls in particular, with the Manner of faſtening Trees to the Walls.

I Meddle not here with deſigning of gardens. This ſubject is too ample to be treated of by the bye; it is intereſting, and might very well furniſh a volume.

SECT. I. A fruit-garden may be laid out in a variety of different ways; let me only obſerve, that judgment and taſte is ſhewn in adapting the plan to the particular ſituation. Deſign ſhould every where be evident, at the ſame time every part ought to be ſuited to nature: conſult elegance, but ſtudy utility: a beautiful garden and good fruit is anſwering the end.

SECT. II. As the greateſt ſkill is required in managing of a fruit-garden, and no ſmall pleaſure attends the poſſeſſion, I ſhall firſt give ſome account of the walls, which are the moſt uſeful part of it: for by means of theſe, we enjoy the tender kinds of fruit-trees that are natives of

warmer climes, and unable to reſiſt the cold in the open air in Great Britain, unleſs in ſome very warm ſituations.

Beſides the above advantages, your fruit-garden, by being walled round, is defended from many injuries.

ARTICLE I.

Of Walls.

THE walls ſupport and ſhelter your wall-fruit-trees, and ſcreen both the fruit and borders from cold: nor is their effect confined to theſe; trees growing on borders in the open air, even at ſome diſtance, are benefited by them, as we ſhall eaſily perceive, on comparing thoſe with ſuch as are expoſed in other parts of the garden, that are more diſtant from the walls.

Walls are built of bricks, or ſtone and lime; they are raiſed of wood or mud; and ſtraw reeds worked cloſe together, are ſometimes fixed perpendicular to pales, and uſed as walls.

I ſhall treat of each of theſe in the order as above.

SECT. I. Brick-walls have generally been preferred on account of the convenience

ency of nailing the branches: for the frequent ſeams or interſtices, which are filled with mortar, afford many opportunities of fixing nails, and placing the branches at the diſtances they offer, or you incline to place them at.

SECT. II. The degree of warmth on a brick-wall is very proper for fruit-trees of moſt kinds, as their vigour and bearing ſufficiently atteſt; yet it is not equal in heat to a ſtone and lime wall, as it is built, or when plaſtered over with white lime.

SECT. III. Brick-walls are built either with or without ſhelters, as the builder chuſes. If the ſhelters are placed in the walls when building, as Mr. Laurence directs, it will be troubleſome to train the trees properly, and keep them to the wall. When the ſloping ſhelters are placed on brackets, ſo as to be taken off or put on at pleaſure, they may prove very uſeful in defending the bloſſoms, and preſerving the new-ſet fruit from being injured by piercing colds, or the ſcorching heat of the ſun-beams.

SECT. IV. To project a cover from four to eight inches breadth, at the top of

the wall, over the ſide of it next to the border, is certainly uſeful in all aſpects, and attended with no inconveniences; it may be uſed on all kind of walls. I am apt to believe, that it prevents the upright ſhoots from becoming luxuriant, which is of great advantage to the lateral or horizontal branches that are nailed to the wall.

SECT. V. When you intend to plant both ſtandards and dwarfs on a brick-wall, you may project a ſemicircular cover in the manner as directed for the top of the wall, at the height you intend to train your dwarfs to. This projection is of great benefit to peach, nectarine, and apricot trees, particularly in cold ſituations, where, without theſe or ſhelters, they are often nipt by the froſt at the extremities of their branches in ſpring, along the upper part of the wall. Above the projection you may train the ſtandard-trees to the higher part of the wall, in ſuch a manner that they may at length fill the whole of the uncovered part.

SECT. VI. In training the branches of fruit-trees to a brick wall, you may either wrap them round with bits of old hats, roons, or liſts of broad-cloth, or pieces of leather;

eather: by means of theſe, nail them to the interſtices between the bricks.

Take care to keep the branches ſo looſe within the ſhreds, that they may not be pinched, nor the bark hurt, by being rubbed againſt the nails.

SECT. VII. Oaken pins made of hard wood, tapering towards the point, round and broad at the head, may be driven into the intervals, ſo as to ſtick firm in the wall; to theſe tie the branches as near the wall as poſſible, with ruſhes, baſſes, or branches of the birch-tree of one ſeaſon's growth, or willows. Theſe are preferable to nailing, as they laſt long, neither do they hurt the tree or the wall; and you can looſe the branches, prune the tree, and tie the branches anew, without drawing the pins; at leaſt very few of them will require to be moved.

SECT. VIII. But preferable to either of the above methods, is painted wires placed perpendicularly. This ſhall be deſcribed after we have given an account of ſtone and lime walls, in which they are neceſſary, from the ſmall number of interſtices that are to be found when the walls are built of large ſtones.

SECT. IX. A wooden-frame, or treillage, fixed to the wall, and to which the trees are tied, is uſed by ſome gentlemen: but as by means of theſe, the trees are kept at a diſtance from the wall, we ſhould prefer the other methods. For we find by experience, that ſuch fruit-branches as are placed cloſe to the wall blow ſooneſt, that the fruit ſit beſt on them, and are earlier ripe than thoſe which are found on branches that are placed at a diſtance from the ſurface of the wall. It will probably be here objected, that the ripe fruit which are placed neareſt to the wall, are ſooneſt and moſt preyed on by millepedes, &c. It is true; but ripe fruit ſoon attract the waſp, flies, &c. on any part of the tree, wherever they are placed.

CHAP. II.

Of Stone and Lime-Walls.

IN ſuch places of this iſland where the ſtones are to be had at an eaſy rate, and lime is not dear, excellent fruit-walls may be built at no great expence; and tho' the ſurface of ſuch walls be unequal, this may be eaſily remedied: for if the ſurface of theſe walls is plaſtered over with white lime, it will not only render it ſmooth, but alſo occaſion a great heat, by reflecting the rays of light. But even on the ſuppoſition that you do not plaſter the walls, the ſolid ſtones acquire a greater degree of heat from the action of the ſun-beams, than bricks are capable of: and what is a farther advantage, they keep it longer. The degree of heat acquired, and its duration, will be in the direct ratio of the denſity of the ſtones; and conſequently, muſt prove leaſt on ſuch walls as are built of porous free-ſtone, and greateſt on thoſe that are reared of whyn and marble.

When

When your trees are trained close to the walls, as they muſt be when the branches are tied to wires, they are ſtrongly influenced by the heat of the ſun on ſouth-eaſt and ſouth expoſures; and in great drought, and very warm weather, I have ſeen apricot, peach, and nectarine trees ſuffer from this cauſe on theſe aſpects; but they are generally ſafe in any other. In ſuch ſituations where the ſoil is naturally light and dry, fruit-trees are more apt to be deſtroyed by exceſs of heat, than a rich and moiſt ſoil: for this reaſon, brick-walls are to be preferred where the firſt is found to prevail, and ſtone and lime walls will anſwer better in the laſt caſe.

As ſtone-walls are much hurt by frequently driving and pulling of nails, which deſtroys the cement, and affords ſhelter to noxious animals; the following method of fixing the branches was contrived. What occaſioned the trial was, the difficulty of placing the branches at proper diſtances from each other, on a ſtone and lime wall. The inventor imagined, that by means of perpendicular wires fixed to the walls, he ſhould be able to place them

at

at any diſtance from each other he ſhould incline. It has now been practiſed by him for ſeveral years with ſucceſs, and by ſeveral gentlemen, to whom he communicated it; and as it is attended with leſs trouble and expence than any other method, and has ſeveral advantages not to be found in any of the ways of fixing trees that I have hitherto deſcribed, I ſhall communicate it to the public; and it will probably come into general uſe, if the trials are fairly made, and the trees managed with proper care. The wires may be placed oblique, or in any direction the planter pleaſes.

CHAP.

CHAP. III.

Of training Trees to a Wall by Means of Wires.

SUppoſe now, that your wall is finiſhed, no matter what its height be, or of what materials it is built; that your fruit-tree is planted and headed down; drive into a ſeam near the top of your wall, or within a few inches of the projection, a ſingle plancher-nail, not quite to the head. Directly below this, near the ſurface of the border, and within four or five inches of your tree, on the ſide where you find a ſeam, drive in another nail of the ſame kind, in the manner as above directed. Take a piece of iron or braſs-wire, which you pleaſe, from number fifteen to twenty; the ſize may be larger, or leſs, as you incline; ſuch as is commonly made uſe of for making cages to ſmall birds will do very well; twiſt the end of the wire about the neck of the firſt nail, then drive in the nail to the head, pull the wire cloſe by the wall in a ſtraight line to the other nail,

nail, keeping it very tight, till you have it fixed by two turns round the neck of the loweſt nail; then turn the wire backwards and forwards till you break it off; or you may ſnap it off with a pair of pincers, and drive the nail cloſe to the wall, in ſuch a manner as it may keep the wire firm. Where interſtices offer near the wire, in the middle ſpace, drive in nails here and there, ſtiffening the wire by carrying it off the line, and keeping it below that ſide of the head of the nail that is fartheſt from the line, till you have driven it into the head, and it hold faſt the wire. Three or four nails will be ſufficient for the middle ſpace, in the higheſt walls. The nails that you make uſe of ſhould have large heads.

SECT. I. In adding of new wires to keep the branches faſt, as they advance in growing, meaſure off the diſtance on the wall above and below, and keep them equal, which will make the wires run parallel to one another. The diſtance may be from eight inches to twelve, leſs or more, as you ſhall judge proper for the particular tree that is to be trained. When the

wires are dry, give them a coat of oil and lead ground together, or varniſh: when this is hard and ſufficiently dried, tie your branches with ruſhes, birches, or baſſes, to the wires, placing the branches horizontally at ſuch regular diſtances as you ſhall incline to diſpoſe them at.

SECT. II. When the wires are painted or varniſhed, they will laſt for many years; nor will they injure the bark of any of the branches, if they be tied cloſe to the wire, and care taken not to hurt them in tying.

SECT. III. This management keeps the trees cloſer to the wall than any other method, and the trees may be pruned and tied with great expedition.

SECT. IV. Provided that you make uſe of ſmall wire of the kind that has been made mention of, the expence of a ſingle tree in nails and wire, will not exceed one ſhilling ſterling.

SECT. V. You may fix and paint new wires againſt the wall, as the branches advance in growth.

SECT. VI. The new ſhoots muſt be carefully tied to the wires as they extend; for

for if they are permitted to grow far beyond the wires, and become bushy at the top, they are apt to be turned back by the wind, and broken off at the part where they are tied to the wires.

SECT. VII. The time proper for putting up the wires, is from the month of May to September, or the whole season when your trees are pushing young shoots. Make choice of fair dry weather for this purpose, as the paint or varnish will then harden in a few days.

SECT. VIII. When the mixed oil and lead falls on the leaves of some of the tender kinds, as peaches or nectarines, &c. it destroys them: this is easily prevented, by fixing and painting your wires on the walls, before the branches reach that length.

SECT. IX. Some of the wires will sometimes be broken off by accidents or rust, at or near the nails, or below their heads. This will happen soonest where they have had no paint: these can be nailed again, and stiffened in the manner directed. Should the wires be broken off entirely, their places can easily be supplied with

with new ones, as they can readily be ſlipt down behind the branches any time of the year, even when the leaves are on, fixed with nails, and ſtiffened. When any of the wires are relaxed or looſened, they can be made tight by nailing, in the manner already directed. You may alſo put up your wires in a horizontal direction, or running down obliquely on each ſide, from a right or obtuſe angle formed in the center of the tree: or the whole of the wires may be placed obliquely, all of them being parallel: or if any one ſhould not grudge the trouble and expence, they may be doubled on the wall with interſections; ſo that the interſtices may form lozenges, and the branches may be tied to the part where the wires interſect each other.

CHAP.

CHAP. IV.

Of Wooden-Walls.

TO make wooden walls of boards of new timber, would be a great charge; nor would they laſt long, unleſs they were painted; and even then, they are not of long duration. The walls that have been raiſed of this kind, have for the greater part been made of planks of old ſhips: ſuch walls are frequently to be met with in Holland. Should gentlemen meet with opportunities of procuring at an eaſy rate timber of old ſhips, they may raiſe ſuch walls, and fruit-trees planted on them will both thrive and bear well; yet I cannot help being of opinion, that brick and ſtone walls are preferable to every other kinds of walls.

However, ſhould any one be ſo diſpoſed, ſuch walls as the above may be raiſed in the fruit-garden for the ſake of variety.

CHAP. V.

Of Mud Walls.

MUD-walls are made of ſoft ſoil, or clay and ſtraw mixed together: the ſtraw is laid acroſs the wall, and the ends of it ſticking out renders the ſurface unequal, ragged, and ugly. Could it be built of ſuch materials as to turn hard and dry, and ſo unite with a coat of lime or plaſter, this would make a tolerable wall, and fruit-trees would ſucceed and bear on its ſurface: nay, even in the ordinary way, if you can bear the diſagreeable look of it, certain it is, that trees will bear on it much better than in the open air. I have ſeveral times ſeen them in France; but I know nothing can recommend them, where other materials are to be had at a moderate expence. Walls raiſed of ſtone and ſail, placed in alternate layers, as we often meet with them in Scotland, would deſerve to be preferred to mud-walls, did not the interſtices lodge mice and other creatures that prey on the trees.

CHAP.

CHAP VI.

Of Walls made of Reeds, Baſket-Work, &c.

REEDS wove or ſewed cloſe together, and fixed perpendicular to pales, may be uſed, and the trees may be trained to them in the ſame manner as to walls. Baſket-work, or willows barked and worked cloſe together, may be applied to the ſame purpoſe: but in both of theſe, there is little reaſon to expect much benefit to the trees or fruit, from the heat that either of them can acquire. Yet they may prove ſome defence from piercing colds, and be of no ſmall utility in preſerving the bloſſoms from injuries, helping the fruit to ſet, and forwarding their maturity; ſo that they may be regarded by the planter as holding a middle place between walls and the open air.

Before I come to determine the proper height of different kinds of walls, it will be proper to give the reader ſome account of aſpects; as the underſtanding the ad-

vantages which reſult from theſe, are of great utility to the planters of fruit-gardens.

CHAP. VII.

Of the different Aſpects of Walls.

WHAT we call the aſpect in gardening, may be determined by the direction of a line running from the face of the wall at right angles, and the point of the compaſs it paſſes through will be the aſpect. Or it may be defined to be that part of the heavens where the ſun is, when he ſhines directly on the ſurface of the wall.

SECT. I. A ſouth-eaſt aſpect is the beſt of any for all kinds of fruit-trees, as the ſun ſhining on it early in the morning, diſſipates the moiſture, and brings on the perſpiration from the leaves and bark, &c. of the trees, earlier than in any other aſpect; and this is kept up in the afternoon after the ſun leaves it, by the warmth of the atmoſphere: and to the greater effect of the heat are we to attribute the fruit-

trees

trees blowing ſooner, and ripening their fruit earlier, on this, than even on a ſouth aſpect. For tho' the heat is greater at mid-day on a ſouth aſpect, when the ſun ſhines directly on the wall, than on a ſouth-eaſt aſpect; yet the effect of the heat muſt be greater on a ſouth-eaſt wall than a ſouth wall, conſidered for an entire day, or during the ſeaſon: for the duration of the heat in the firſt caſe, will be more than equivalent to the greateſt degree of its intenſeneſs in the ſecond, from the reaſons already given in the preceding part of this work.

At the ſame time I muſt obſerve, that on a ſouth-eaſt aſpect the trees are very apt to ſuffer damage from froſts that happen late in ſpring, or in the beginning of ſummer. For the ſun riſing on the trees while they are covered with hoar-froſt, or loaded with dew, acts forcibly on the tender branches; and the included air being too much rarified, burſts open the ſides of the veſſels, and deſtroys their ſubſtance. And their texture being once ſpoiled, vegetation is at an end: hence they ſoon after turn dry and decay; and this ſometimes happens even to the body of the

tree: but in good ſeaſons, when the degrees of cold and heat are moderate, this aſpect has greatly the advantage.

SECT. II. In a ſouth aſpect, the riſing ſun ſhines obliquely on the wall, by which the effect of his rays is leſs, and the moiſture is gradually diſſipated without hurting the branches, or injuring the leaves; whereas theſe are often bliſtered, ſhrivelled, or ſhrunk up, on a ſouth-eaſt aſpect, particularly the leaves of peaches and nectarines.

The two aſpects mentioned are undoubtedly the fitteſt for peaches, nectarines, late pears, ſome plums, vines, or, in fine, every kind of fruit-tree that naturally grows in hot countries.

SECT. III. South-weſt and weſt aſpects may likewiſe be planted to advantage. On the firſt, apricots, peaches, and nectarines will do well, where the ſoil is proper, and the climate favourable; plums and pears, even the delicate kinds, will ſucceed on either. Cherries will proſper and bear on every aſpect, as alſo apples.

SECT. IV. The aſpects from weſt by north round to ſouth-eaſt, are improper for ſuch fruit as require much heat to ripen them; yet they may be employed to good

good purpoſe for ſome kinds of fruit, as morello cherries, raſps, &c. Early pears and apples will grow vigorouſly, and bear well, even on a north aſpect, which is the worſt of all, as it enjoys leaſt ſun. Yet even on this, the fruit will hold much better than in the open air, tho' they will be later in ripening.

By planting ſummer-fruit on each of theſe aſpects, we may enjoy the ſame kind for ſeveral weeks, in a continual ſucceſſion; whereas on trees that are planted in the open air, or on a ſingle aſpect, the fruit will not continue in a ripe ſtate, without rotting, for above five or ſix days. Other advantages may be reaped from them, which I need only to hint at.

Autumn fruits on theſe aſpects will ſucceed ſuch as are ripened on better aſpects, or ſuch as are produced in the open air, tho' they will be inferior in their qualities. To conclude, theſe aſpects may be employed in retarding ſummer or autumn fruit: winter fruit never can ſucceed on any of them; that is, they will neither come to perfection, nor acquire a proper degree of ripeneſs in northern climes.

SECT. V. But to illuſtrate the ſubject of aſpects, I ſhall ſuppoſe that a new garden is to be planned: the moſt convenient figure is a ſquare, in which the walls will all be of equal length, the angles equal, and two of the ſides parallel to each other. If you line your walls ſouth-eaſt and north-weſt, north-eaſt and ſouth-weſt, your aſpects will be ſouth-eaſt, ſouth-weſt, north-eaſt, and north-weſt. On the firſt of thoſe the fruit will ripen the earlieſt of any aſpect; on the ſecond, the maturity of the fruit will be ſomewhat later than on a ſouth aſpect. A north-eaſt aſpect has ſome advantages over a north aſpect; a north-weſt is conſiderably worſe than a weſt aſpect. The reaſons are evident from what has already been obſerved.

A ſouth-eaſt aſpect enjoys the ſun from its firſt appearance in the morning to mid-day.

A ſouth-weſt aſpect is ſhone on from nine in the morning to the ſetting of the ſun in the evening.

A north-eaſt aſpect can only have the ſun for a few hours in the morning, or till nine of the clock in the forenoon.

A north-

A north-weſt aſpect is only viſited by a few feeble rays before the ſetting of the ſun; and even in the longeſt days in June, does not enjoy the ſun-beams above three hours: hence it is eaſy to diſcern, that its productions muſt be very late.

SECT. VI. But I ſhall now ſuppoſe, that the direction of the lines of your walls is according to the cardinal points: then your aſpects will be eaſt, ſouth, weſt, and north. The trees on the eaſt aſpect will loſe the ſun-ſhine at ſix in the morning.

The ſouth aſpected wall will begin to be ſhone on by ſix o'clock in the morning, and will enjoy the ſun-beams till ſix in the afternoon.

The weſt aſpect will begin to receive the chearing rays of the parent of ſeaſons about twelve o'clock, and enjoy them till he leaves the horizon.

The north aſpect receives a ſhort morning and evening viſit about the ſummer ſolſtice, but feels little of the influences of the ſun, as the crude and late productions ſufficiently prove.

SECT. VII. If we conſult experience, we ſhall find that the ſame kind of fruit planted

planted on every aſpect, will ripen ſooneſt on a ſouth-eaſt wall; and the order of ripening of the remaining aſpects will be as follows: firſt, a ſouth; ſecond, ſouth-weſt; third, weſt; fourth, north-weſt; fifth, north-eaſt; and laſt of all, on a north.

SECT. VIII. Were I now to adviſe my readers which of the two figures to make choice of, I would determine the point in favour of the firſt, as proper on a heavy ſoil and moiſt ſituation; the ſecond, as fitter for a light ſoil and dry ſituation.

I need not give the reaſons; they may be drawn from what I have already obſerved, and are conformable to experience, as the planter will find on making trial.

CHAP.

CHAP. VIII.

Of the Height of Fruit-Walls.

WHERE the the ſoil is rich, and the aſpects good, you may build your walls from twelve to fifteen feet in height: in the other aſpects they may be raiſed from ſeven to ten feet high. Where the ſoil is light, nine or ten feet, or even to twelve, for the beſt aſpects will be ſufficient: the other aſpects may have from ſix to nine feet of height.

SECT. I. Pear-trees, when they are trained to the wall without pruning, will riſe to a much greater height than what is here directed; but if the branches are laid properly in a horizontal manner on the wall, at due diſtance, and pruned with judgment, they may be confined to leſs height than what is above ſpecified.

The above directions are given in conformity to the prevailing taſte. I am perſuaded that twelve feet is a ſufficient height

height for a fruit-wall in any ſoil or ſituation whatever. I ſhall give my reaſon for this aſſertion, when I come to take notice of the proper diſtances at which fruit-trees ought to be planted on walls.

SECT. II. Peaches, nectarines, apricots, plums, and cherries, even in the beſt ſoils, will require no higher walls than twelve feet, for they ſhould always be trained horizontally; and when they are properly pruned, and laid on the wall at ſuitable diſtances, the undermoſt branches will be the ſtrongeſt; and if the vigour of the low branches is encouraged, it not only moderates the height of the trees, but alſo encourages their bearing.

CHAP.

CHAP. IX.

Of the Making, Dreſſing, and keeping of Borders for Wall-Trees.

THAT pains ought to be beſtowed on theſe, is evident; for from them the roots of the trees are to draw their nouriſhment, while they are kept fixed to the wall. And for this purpoſe they ought to be made large, that is broad, where the ſoil is but indifferent, and narrower where it is very rich. The breadth or wideneſs may be from ſix feet, which is the narroweſt any border ſhould be made, to eight feet, which will be ſufficient for borders in any kind of ſoil, even the pooreſt.

SECT. I. Let the ground be carefully trenched one year before planting, frequently turned over by delving, and hough it whenever the weeds appear: if dung or other enriching materials are required, add them while it is in fallow. Level your borders as the ſituation humours, whether it requires a dead level or ſloping ſurface: place nearly an equal depth

depth of ſoil every where. It is a lucky circumſtance when you have a hard firm channel at bottom. Such as incline, may ſupply the want of this, by laying flag-ſtones, or a layer of gravel, at the proper depth, before they begin to make up the border. It is of much benefit to the tree, to keep the roots from deſcending too far: and the confining of them prevents the trees from ſhooting luxuriantly, and conſequently diſpoſes them for producing fruit-branches, and bearing ſooner than ſuch trees as grow in a ſimilar ſoil without reſtraint.

SECT. II. To carry new ſoil, or virgin-earth, from any conſiderable diſtance, is a vain expence; for if your borders are made up of tolerable ſoil, you can enrich them to any degree you pleaſe by labour and dung. I have known pear-trees bear well in what ſeemed to be mere ſand.

SECT. III. When the ſoil is wet, you may raiſe the borders not only above the ſurface of the adjoining walks, but likewiſe by an eaſy aſcent the whole way to the wall. Plant your trees high in the ſoil of your borders, and put on the cope

of your walls, ſloping backwards, in ſuch a manner, as may throw the rain which falls on them to the back of the walls.

SECT. IV. If, on the contrary, your light ſoil is ſandy, and naturally dry, you may ſo contrive the borders and walks adjoining, as to throw the rain by a gentle deſcent on the fruit-borders, even to the trees. And if your walls are ſtone and lime, the cope, which will be pretty broad, may be ſo placed at top, as to make the rain which falls on it deſcend from the projection on the borders.

SECT. V. But before any gentleman determines himſelf in following the above directions, let him attentively conſider the aſpect of his walls; for from ſome quarters of the heaven we have copious ſhowers, and from others very ſcanty. The borders on the walls that look to the ſhowery points of the compaſs, may be conſidered as enjoying plenty of moiſture; the others, as naturally dry, and ſo requiring artificial ſupplies. It would prove of little uſe to determine the matter in general; a few years obſervations will aſcertain the quantity, and determine the poſſeſſor to make a proper choice in every particular ſituation.

Having

Having thus given directions as to preparing of the borders, I come to conſider the diſtances at which fruit-trees ought to be planted in general, and ſhall afterwards make mention of ſuch particulars as ſeem needful to direct the planter occaſionally.

CHAP. X.

Containing ſome Directions with regard to the Diſtances at which Fruit-trees may be planted on Walls.

AS many gentlemen have fruit-gardens who do not underſtand pruning, nor even will give themſelves the trouble of ſtudying it, I ſhall point out ſuch diſtances as are proper, where the trees are little pruned.

SECT. I. I ſuppoſe that all the branches are to be trained horizontally to wires, after a proper head is provided by pruning. For in the manner in which they are commonly reared, in ſhape of the ſticks of a fan when expanded, no wall will be able to contain them, after they have grown ſome years in that manner, i. e. from twelve

twelve to twenty years. At the ſame time, I am ſenſible that ſuch directions will be deſpiſed by thoſe who underſtand pruning, and have practiſed it in a judicious manner without intermiſſion in the proper ſeaſons. For in this art no time is to be loſt; and one year's neglect of pruning, will often ruin a well formed tree. But I leave digreſſing, and return to my diſtances.

SECT. II. On the good aſpects, where the border is very rich, you may plant peach and nectarine trees, at fifteen feet diſtance; plums at the ſame: apricots and cherries may have eighteen feet: pears on free-ſtocks, that grow groſs, or produce much wood naturally, or ſuch kinds as are obſerved to riſe high in orchards, may be placed at thirty or twenty-four feet from each other; though twenty feet is enough of room for moſt kinds of pears on free-ſtocks: if they are grafted on quinces, fifteen feet will be ſufficient.

Apples on paradiſe-ſtocks may be placed twelve feet aſunder.

SECT. III. On the bad aſpects, in the ſame ſoil, the diſtances may be as much greater as the walls are lower; or, in the language of natural philoſophers, the diſ-

tances may be in a reciprocal ratio of the height of the walls.

This is contrary to the eſtabliſhed practice, and the directions of every author on gardening: it has anſwered in practice, which was founded on obſerving, that every tree, of whatever kind, acquires a certain ſize before it comes to its acmé, or perfect ſtate. On a low wall we cannot encourage the perpendicular growth of the tree, but we can promote its horizontal ſhooting, which ſerves the ſame purpoſe; for the tree trained in this manner continues vigorous, and extends to its natural limits, or grows to the ſize peculiar to the kind: hence it is recommended to gentlemen. The low wall ſaves expences, and fruit are often found on bad aſpects, even in thoſe years when they have failed on good.

SECT. IV. In a light ſoil, on the good aſpects, the diſtances may be as follows: peaches, nectarines, and plums, twelve feet; apricots and cherries, fifteen feet; pears on free-ſtocks, eighteen feet; on quince-ſtocks, twelve feet; apples on paradiſe-ſtocks, ten feet.

SECT. V. On the bad aſpects, in the

ſame ſoil, the diſtances may be increaſed as the height of the wall is diminiſhed; i. e. if the height of the wall is diminiſhed one third part, the diſtance may be encreaſed one third, and ſo on.

The diſtances I have directed, will ſurpriſe ſuch as conſult Quintinye, where they will find the diſtances at which he planted his trees little more than the half of the above. He divides trees into ſuch as require much room, and thoſe that do with leſs.

The firſt claſs are, figs, peaches, apricots, and plums.

The ſecond are, pears, early cherries, and medlars.

If the walls are ſeven or eight feet high, he directs to plant the firſt claſs at twelve feet diſtance; the ſecond, at nine feet diſtance, when the ſoil is good.

If the ſoil was indifferent, the firſt were planted at the diſtance of eight feet; the ſecond, at that of ſeven feet.

Switzer allowed wall-trees more room than Quintinye, tho' his diſtances come far ſhort of thoſe I have directed.

I may here obſerve, that if we conſider

Quintinye's manner of pruning wall-trees; his forced borders, made up of compoſt; that he has forbidden the uſe of dung on the borders; and alſo take notice of the ſtocks which he uſed; we ſhall find that he had good reaſons for the directions which he gave.

Nor is it to be doubted, but that Switzer found the diſtances he makes mention of, anſwer in practice in England; nor will this be difficult to be accounted for in his method: for the taking the trees frequently up, and pruning their roots; as alſo the breaking their roots, by pulling the body of the tree with cords in different directions; would limit the growth of the tree, and diſpoſe it to bear in leſs room than what it naturally required.

SECT. VI. I may conclude this chapter by obſerving, that ſuch as underſtand pruning, and practiſe it judiciouſly, will find no great difficulty in confining their trees to twelve feet: the trees will look handſome, and bear plentifully.

At the ſame time, I muſt do the modern practice the juſtice to acknowledge, that I am certain from experience, that pears, cherries,

cherries, apricots, and plums, when allowed room enough on the wall, and a proper head provided by pruning for two or three years, may be trained to the wall with little pruning except in ſummer; and ſeldom will there be occaſion for ſhortening any of the branches, unleſs in ſome particular trees, when they exceed the neighbouring branches in length: for all luxuriant branches ſhould be deſtroyed as ſoon as ever they appear in the growing ſeaſon. But of the art of pruning, and the manner in which the trees grow and bear, I ſhall have occaſion to treat more fully afterwards; in the mean time, we ſhall give directions for planting of wall-trees.

CHAP. XI.

Containing ſome Directions as to Planting of Wall-trees.

LEST the reader ſhould find fault with the method I here follow, and aſſert that chapter XIII. and XIV. ought to have preceded this chapter; let him reflect, that I have already given ſuch directions as ſeemed proper for raiſing all kinds of fruit-trees; and he may here ſuppoſe, that he is to take all the trees from his own nurſery which he has occaſion to plant on his walls, and he will there find that he has been ſufficiently inſtructed for making a proper choice.

SECT. I. Your borders being prepared for the reception of the wall-trees, after the manner that has been directed, in the end of September; any time in the month of October, or even to the end of November, if the freſh weather permits you to work the ſoil, meaſure off your diſtances, and mark on the wall the places where the trees are intended to be placed; then dig the pits, making them of the proper depth for

for receiving the trees. Remember to plant them at firſt high on the border; that is, not very deep, as they deſcend conſiderably after ſtanding ſome time.

SECT. II. Plant peach, nectarine, and every other kind of trees by themſelves; and let the ſeveral ſorts, or ſpecies, if no objection ariſe from the ſoil, &c. ſucceed one another in the order of their ripening; as this may be of uſe to direct your gardener, or yourſelf, in examining their maturity, when the proper ſeaſon of their ripening advances.

SECT. III. Peach, nectarine, apricot, plum, pear, apple, and cherry trees are fitteſt for planting after one year's growth of the bud or graft; when they can be raiſed, pruned, and planted, without loſs of time, ſo as that all may be performed in the ſame day.

SECT. IV. Make choice of ſuch plants as have ſhot vigorouſly, provided they have a ſhining bark and well formed eyes.

In raiſing them, be careful not to injure the good roots, but cut out ſuch roots as run acroſs their neighbours, and take off intirely all the roots from the ſide of the tree which you intend to place next to the

wall: prune the other roots to ſuch lengths as you ſhall judge to be moſt proper. Conſider that the new roots are produced from the inner bark of the cut ends of the roots; for which reaſon, cut your roots in ſuch directions as will encourage the tranſverſe, or horizontal growth of the young roots.

When the tree is in the pit, ſeparate the roots from one another, ſo as that they may be placed at equal diſtances, or as near to this as it is poſſible to bring them to, without doing violence to the roots. We may regard thoſe roots as the beſt formed for our purpoſe, which extend horizontally from the tree, like the radii from the center in a ſemicircle.

SECT. V. If the ſtock, where it was headed down in budding, or cut over in grafting, is not yet covered with bark, place the uncovered part next the wall.

Let the ſtem of your tree be placed as near to the ſurface of the wall as poſſible: this you will find of great uſe afterwards, when you come to train the young ſhoots of the tree to the wires, &c.

The placing the tree at a diſtance from the wall, with its head leaning to it in a diſtorted poſture, is ugly, and conſtantly plagues

plagues you in the growing ſeaſon, not only with ſhoots from the ſtock below, but likewiſe from that part of the graft which leans towards the wall in an oblique poſition.

SECT. VI. Your tree being in the pit, and the roots kept in their places as directed, let the earth be put in with care all round the tree, ſo as not to alter its poſition: ſhake the tree frequently, that the earth may fill up every vacuity; then preſs it gradually all round the tree, ſo as to make a deſcent towards it. This is called panning; and after you have poured in water enough to wet the roots and ſoil, leave it and proceed to another.

SECT. VII. Dry weather is propereſt for planting, as the free ſoil fills up every interſtice, and cloſely ſurrounds the roots.

Panning was probably introduced with a view to keep the tree and its roots moiſt, as it determines the rain to the body of the tree, along which it muſt glide till it arrive at the roots. Beſides the above, gardeners generally lay ſome dung, litter, moſs, or inverted turf, round new planted trees. This they imagine keeps the tree warm through the winter, preſerves its life,

life, and by enriching the ſoil, encourages its growth, by promoting its early ſhooting.

SECT. VIII. When you are to plant trees that have been taken up a great while, after you have done with dreſſing their roots, place them in water for ſome hours before you plant them: this diſpoſes them for imbibing moiſture from the ſoil, and puſhing new roots.

SECT. IX. Leſt the tender roots which your trees puſh in winter, ſhould be broke by wind-waving, it will be proper to keep their heads fixed either to the wall, or ſtakes drove into the border on purpoſe, till the end of March or beginning of April, when it will be proper to head them down.

CHAP.

CHAP. XII.

Of the Time and Manner of Heading down Wall-Trees after they have been ſome time planted.

THE proper time for this, is after the ſap has made ſome advances, which is eaſily diſcernible by the ſwelling of the buds: tho' it may be ſafely enough done from the middle of February to the middle of April.

SECT. I. In heading down your tree, leave two lateral buds, one on each ſide of the ſtem, and cut off all that is placed above theſe, ſloping your cut from the wall upwards: hold faſt the tree with one hand, while you cut off the head with a ſharp knife in the other.

SECT. II. Should no buds be found at the lower part of your ſhoots, in pear, apple, or plum trees; or even on the other kinds that have been made mention of; it is of ſmall importance: cut them over at a proper height, and you may depend on it, that they will put forth branches on the ſides you deſire, provided you carefully

rub

rub off the ill placed buds, whether on the ſides, the fore or back part of the tree.

SECT. III. Cut over your trees a little higher than the part where you expect them to branch out from.

The above directions are given on the ſuppoſition of your having the trees in a nurſery of your own. When you are to purchaſe them from a diſtant place, they muſt be a conſiderable time out of the ground; and in this caſe, trees of one year's growth will be ſo much dried, as to endanger their not growing when planted.

SECT. IV. The fruit-trees that you purchaſe from the London nurſeries, ſeldom arrive till the ſpring months: and when they come to hand in froſt, they muſt be kept out of the ground till freſh weather prepares the ſoil for receiving them; ſo that ſeveral of them are often killed, and others much weakened, before they can be got planted.

Nurſerymen rather chuſe to ſell off their old fruit-trees, than to diſpoſe of ſuch as are only of one year's growth. Many of them which they ſend down, have been often cut over, and ſome of them laid in the ground for one year. All theſe practices, which

which are intended to retard the growth of the trees, are very hurtful to them; and we find in experience, that ſuch trees, when planted, often diſappoint our expectations; for tho' they take to growing, they ſeldom make handſome trees, and many of them dwindle and die.

CHAP. XIII.

Containing ſome Directions how to make a proper Choice in purchaſing of Fruit-Trees.

WHEN you buy your fruit-trees from nurſerymen who provide themſelves from the London nurſeries, the trees, by being often taken up, replanted, and headed down, give you but a ſmall chance for ſucceſs.

The reaſons are already given in the laſt chapter. But beſides the above inconveniences, by irregularity in keeping their regiſters, you run a very great riſk of being diſappointed of the kinds you would incline to finiſh your plan with.

SECT. I. I have frequently got trees from London, of two, three, four, or five years

years old, which being planted after ſteeping their roots in water for ſome hours, have taken to growing, made good trees, and proved plentiful bearers; even tho' ſome of them were not planted till the month of March, after having been more than two months out of the ground. In buying from thence, I have ſeldom been diſappointed in the kinds. I wiſh I could ſay as much for ſome purchaſed nearer home.

SECT. II. Your beſt method, when you buy from nurſeries, will be to call for the catalogue, examine the rows by the numbers, and chuſe your trees from the kinds that the nurſerymen poſſeſs. In making your choice, prefer ſuch trees as have never been headed down, are clear and ſhining in the bark, and have ſhot vigorouſly the preceding year: if the ſhoot is too luxuriant for the kind, they ought to be rejected; but that is eaſily known from the appearances which they make.

SECT. III. Should any planter be ſo incautious as to ſend his liſt of fruit-trees to ſome nurſerymen; no matter how ample the commiſſion be, or how various the kinds he has made choice of; they will ſupply the whole from the ſcanty number of

of kinds they poſſeſs. It will be ſeveral years before he diſcovers the cheat; and when he does, no reparation can indemnify him for the above loſs. I could give ſeveral inſtances to prove that the above is more than a ſuppoſition; but let what I have mentioned ſuffice to put the planter on his guard.

SECT. IV. No deceit is more common than ſelling nectarines for peaches, one kind of plum-tree for another kind, &c. But the confuſion that generally prevails in the names of fruit, favours the deceit: for the ſame kind of fruit bears a multiplicity of names; and the ſame name is likewiſe often given to fruits of very different kinds. Hence the confuſion muſt always remain among planters, till a proper manner of ranging and aſcertaining each kind ſhall be found out; for hitherto there are but few kinds that are univerſally known by one proper name.

CHAP.

CHAP. XIV.

Of the proper Time for Planting of Fruit-Trees.

MANY have been the diſputes among the curious about the proper ſeaſon for planting of trees in general. Some writers, in their directions, have inſiſted on early planting as the beſt; while others not only aſſerted that late planting was preferable, but practiſed it. It is not my intention to examine the reaſons of either party; the beſt way of deciding all diſputes of this kind, is by appealing to nature. And here, warranted by experience, I can truly aſſert, that fruit-trees in autumn and in winter, and alſo in the beginning of ſpring, puſh white round tender ſhoots through the ſoil: that theſe are really roots, and acquire a darker colour as they advance in age: that theſe productions not only occaſion the early ſpringing of ſhoots from the ſtem, &c. but ſupply every part of the tree with plenty of ſap, through the growing ſeaſon. Should any gentleman doubt of the truth of the above obſervations, let him

him only take up a tree whoſe roots were pruned before planting, after it has grown vigorouſly for one ſeaſon, and he will find that its roots conſiſt of ſuch young roots as I have above deſcribed.

SECT. I. From the above and other obſervations which I need not make mention of, I lay it down as a general rule, that though trees may be planted from September to March, whenever the weather is favourable, yet early planting is certainly preferable: and when you have the trees of your own, the earlier you plant, the ſurer the ſucceſs will be.

SECT. II. The directions that are commonly given to plant trees late in moiſt ſoils, may be followed by ſuch as chuſe: but if the moiſture is ſo great as to hurt a new planted tree in winter, I ſhould expect little profit from a tree growing in ſuch a ſituation. Certain indeed it is, that trees planted in ſuch ſoils late in the ſpring, are in no danger of ſuffering from drought, which undoubtedly deſtroys many trees that are planted in light ſoils at that time.

SECT. III. I forgot to make mention of it in chapter XII. that, by way of experiment, I have often headed down ſuch

fruit-trees as I had occaſion to plant on walls late in ſpring, before putting into the ground; and that, in general, I have found them ſhoot early after being ſo treated, and grow very well. Beſides, you have this advantage by the practice, that the trees can be placed as near to the wall as you pleaſe; which their heads often prevents, when you leave them on in planting, particularly thoſe of ſeveral years growth.

SECT. IV. If planters ſhould be anxious about ſupplying the place of any fruit-tree that is accidentally killed in ſummer, this may be done by keeping trees planted in baſket-work; by which means they may be ſafely removed along with the ſoil: or if you reduce the mould, in which you are to plant your tree, to the conſiſtence of pap, you may depend on the tree's taking even in ſummer; that is, you will ſcarce obſerve any change to happen from the removal to the tree.

CHAP.

CHAP. XV.

Treats of Pruning and Training of Wall-Trees.

THE planter being now inſtructed in the manner of planting and heading down of wall-trees, it is proper I ſhould give directions with regard to the method how they are to be pruned and reared againſt the wall; for without pruning, you never will be able to fill your wall properly with bearing-branches, nor to keep it full. For on a wall, if a tree is left to itſelf, the upright ſhoots will ſoon ſtarve thoſe that are placed below; and ſo many ſhoots will ſpring from the fore-part and back-part of the branches, as muſt in a ſhort time ruin thoſe that are well placed on the tree, or contiguous to the wall: hence the neceſſity of pruning will appear. And the deſign in pruning of wall-trees will be, firſt, to provide ſuch a number of good branches as may be required for gradually filling the wall, at the proper diſtances ſuited to the kinds. Secondly, To preſerve and encourage ſuch bearing-branches as are well

placed; and, for their ſakes, to deſtroy all ſuch as are ill placed, or take their riſe at a diſtance from the wall.

But as nothing can more conduce to the proper management of wall-trees than a diſtinct idea of a well-trained wall-tree, I ſhall endeavour to communicate this by a general deſcription of its progreſs; and then make mention of the advantages that reſult from it.

SECT. I. The tree ſhould look handſomely on the wall, and bear plentifully on every part. To obtain theſe ends, train your loweſt branches, which ought to be equally extended on each ſide, and the moſt vigorous of the tree, at eight inches diſtance from the ſurface of the border. Let them be placed exactly horizontal, when the border is level; and to encourage their growing, let their tops always extend a little farther on the wall than the tops of the branches that are placed immediately above them. The other branches ſhould all of them be parallel to theſe, and kept gradually a little ſhorter, the higher that they reach on the wall.

Keep the diſtances between the branches as near on an equality as poſſible. Theſe general

general directions muſt be carefully obſerved while the tree is in the growing ſtate: when it comes univerſally to a bearing ſtate, or the extent of its growth, the wall ſhould then be full, and the tree ſo managed as to keep it conſtantly ſo, without the branches of the adjoining trees interfering. All the ſpurs and bearing-branches ought to be nearly equal in ſize, which can only be obtained by deſtroying the fore and aft ſhoots; and by this means encouraging the lateral ones to thrive and bear.

SECT. II. A tree regularly trained in this manner, may be equally full of fruit, and the fruit on every part of the tree equally good. Let us now conſider, as a proper contraſt, ſuch fruit-trees as we commonly meet with on walls, where trees are trained in the ordinary manner, like the expanded ſticks in a fan; for in ſuch trees, the middle ſhoots are by far the ſtrongeſt, and the low lateral branches are ſo much ſtarved, as to be unable to bring the fruit to perfect ripeneſs and the proper ſize: and theſe branches become gradually weaker till they die, and leave the lower part of the wall quite uncovered.

SECT. III. Thus far have we conſidered the ſubject in general; I now proceed to give a particular deſcription of the management of wall-trees, as to pruning and training, till they come to bear; and ſhall likewiſe take notice of what care is neceſſary, even in a bearing ſtate, to keep them in order. It is only propoſed to take notice of ſuch particulars as are moſt uſeful; the ingenious may draw the proper conſequences from what ſhall be obſerved.

SECT. IV. If the trees are planted at the diſtances I have directed, you may encourage their vigorous ſhooting, when the branches are ſufficient in number, and properly placed on the wall. In order to this, rub off all buds, or young ſhoots, as they appear, or ſpring from the fore or back part of the branches of the tree. If too many branches grow from the ſides of a new-planted tree, diminiſh their number to two on a ſide, if they are of moderate ſize: but if the ſhoots are very ſtrong and nearly equal, you may ſafely leave three on a ſide. Endeavour to preſerve as much as poſſible an equality among the branches on each ſide. Tie all ſide-branches either to

wires

wires placed on the walls, or to ſtakes thruſt into the ground on each ſide; this will preſerve them from being hurt by the wind. Cauſe ſnails, caterpillars, or any creature that preys on the leaves, buds, or bark, to be picked off. Shorten none of the branches in the growing ſeaſon, but cut off cloſe to the tree ſuch as are ill placed.

SECT. V. Having now finiſhed the few directions I intended to give for the management of fruit-trees the firſt ſummer after heading down, I ſhall take notice of a few things which may prove of ſome utility to the planter, before he comes to the winter-pruning.

Some attentive obſervers of vegetation have informed us, that in the ordinary production of branches on fruit-trees, we may diſtinguiſh five different kinds of them from their natural appearances: and the uſefulneſs of this diſtinction will afterwards plainly appear, when we ſhall come to give particular directions in the art of pruning. At the ſame time it muſt be acknowledged, that the differences are much more obſervable on ſome kind of fruit-trees, than on others. In the following numbers we ſhall deſcribe the ſeveral kinds of branches,

which will be beſt underſtood by conſidering them comparatively on the ſame tree.

N°. 1. The firſt kind may be called wood-branches: they are of a middling ſize, between thoſe that are found deſcribed in N°. 2. and N°. 3. as they are to be obſerved on the ſame tree. It may be taken notice of, that the eyes are placed on theſe branches at no great diſtance from one another; that the branches themſelves look clean, and are moderately ſtrong: they are alſo ſo hardy, as to be able to reſiſt injuries; for which reaſon, they are the fitteſt for forming the ſhape, and maintaining the figure of your tree. From them, in moſt kinds of fruit-trees, ſpurs, or little branches, are produced; the eyes of which are numerous, round, and full; ſome of them prominent, particularly when the ſpring is a little advanced. Theſe contain the flowers, and, after they are blown, nouriſh and ſupport the fruit that are formed from them.

N°. 2. have juſtly been called bearing branches, from the uſes to which nature has deſtined them. They are in ſize leſs than the above branches, N°. 1. their eyes are placed nearer to one another, are fuller, rounder,

rounder, and higher raiſed above the bark; ſo that they reſemble the eyes on ſpurs. Bearing-branches are commonly ſhorter than wood-branches; and in pear, apple, and peach-trees, &c. have ſometimes a large flower-bud placed at each of their extremities. Theſe branches in moſt kinds generally bear fruit for ſome years, and then decay and diſappear, that is wither or rot, and fall off.

N°. 3. The third kind are luxuriant branches; they are uncommonly groſs and long, when compared with the other branches of the ſame tree. They have their eyes in large ſpaces, and placed at a great diſtance from one another: they are alſo flatter than on the preceding kinds of branches. Theſe glutton branches are often produced in the middle of wall or dwarf-trees, &c. or from the upper, back, or fore-part of branches of wall-trees. They ſhould be carefully obſerved and deſtroyed, becauſe when they are permitted to grow any conſiderable time, they ſpoil the figure, hurt the growth, and prevent the bearing of the tree.

N°. 4. The fourth kind are irregular branches: they are ſo called from their ſituations,

tuations, which are ſuch, that they can neither be preſerved for bearing fruit, nor contribute to the ſhape of the tree. The reader will obſerve, that all the other kinds of branches may be contained in this claſs.

N°. 5. The fifth kind are late unripened branches. They are commonly produced in the month of Auguſt, or later in the growing ſeaſon; and are eaſily diſtinguiſhed by their colour, which greatly differs from that of the ſound branches in the ſame tree. Many of them are large at the root, and gradually taper towards a point. This is generally their ſhape, when they are produced from the extremities of wood or fruit-branches. They often ariſe from the ſpurs, and alſo from the bark of the ſtem or branches: their eyes are ſmall and ill formed, and their ſubſtance is ſoft and ſpungy.

SECT. VI. Having finiſhed what we intended to communicate on the differences that are to be found among the branches of fruit-trees; it may likewiſe prove of ſome utility to turn our attention to obſerve the effect of the ſeaſons, and mark the times when the branches are produced, that we may better underſtand the

the manner of growth in fruit-trees. After having been informed by repeated obſervations, we can aſſert, that at two different times of the growing ſeaſon, we have generally noted a ſenſible increaſe in the length and number of the branches on fruit-trees; for which reaſon we ſhall diſtinguiſh theſe by the names of the firſt and ſecond growth: for the appearances are regular, tho' they may prove variable in the time and manner. But the above will be better underſtood by a deſcription of the progreſs of vegetation, in which will be included the firſt and ſecond growth.

The firſt ſenſible effort of nature on trees, with regard to their growth, in moſt countries, is in the ſpring. The month of April is generally the time; then many kinds of fruit-trees unfolding their leaves, the bloſſoms appear and open by degrees; the young ſhoots are protruded, and gradually increaſe in length and thickneſs: and while the fruit are forming and increaſing their bulk, the branches are advancing in growth. This action of Nature's is evidently continued through the month of May. First growth.

In

In the month of June, here, in the fruit-garden, Nature ſeems to employ herſelf ſolely in advancing the growth of the fruit in ſeveral kinds, while the vegetation of the tree is apparently ſuſpended, or ſo ſlow, as to be almoſt imperceptible. In this ſtate of inactivity Nature continues, as if recruiting her forces, for ſome weeks; then beginning to exert her influence anew, the effect of the ſecond growth is ſoon apparent in the young ſhoots; and continuing to perſiſt, ſhe exerts herſelf in more vigorous efforts than in the firſt growth, even to the autumnal equinox: after which, only a few ineffectual efforts are made in the production of late branches, that never come to any conſiderable degree of vigour, unleſs in ſome very favourable ſituations; for which reaſon I have called them unripened, as they ſeldom acquire any tolerable degree of ſtrength. The following obſervations will ſerve to illuſtrate the ſubject.

Second growth.

Obſervation firſt. It ſeems proper to take notice in this place, that the branches which are produced in the firſt growth, are for the greater part wood and bearing branches, both of them good of their kinds; for

for which reaſon they ought carefully to be preſerved, when they can be made ſubſervient to the views of the planter. That ſometimes, even in the firſt growth, luxuriant branches do make their appearance is certain; but if they are properly placed on the tree, pinching them off to a few buds, diſpoſes them to produce good branches in the ſecond growth. However, it may be laid down as a general rule, that all luxuriant branches ſhould be directly deſtroyed, whenever they diſcover an uncommon degree of vigour, unleſs in the above caſes.

Obſervation ſecond.

That the branches which are firſt produced in the time of the ſecond growth, or ſuch as have made ſome progreſs before the middle of July, become ſtrong enough before the approach of winter; neither do they run any riſk of being hurt by the cold of the ſucceeding ſpring; ſo that they will be found to be proper for forming and advancing of the tree. Nay, in warm ſeaſons, and in good aſpects on walls, branches that are produced much later than the middle of July, will be found ſtrong and vigorous againſt the time of the winter-pruning; ſo that where they can eaſily be brought near enough,

they

they may be applied to the wall, in order to give elegance to the ſhape of the tree, and afterwards to promote its bearing.

We ſhall for the future, when we are giving directions in the courſe of pruning, make mention of the firſt and ſecond growth of fruit-trees, in the ſenſe as they are here deſcribed from nature.

The firſt and ſecond growths are as obvious to the attentive obſerver, on trees in the open air, on eſpaliers and on dwarfs, as on wall-trees: they are every where to be obſerved, tho' their appearance varies according to the forwardneſs or backwardneſs of ſeaſons, and the warmth and cold of ſituations, &c. But it is proper to return to winter-pruning after the above digreſſion, which was intended to render the ſubject more eaſily underſtood by the reader.

CHAP.

CHAP. XVI.

Containing ſome particular Directions for Winter-Pruning of Wall-Trees after one Year's Growth.

I Propoſe now to give proper directions in what manner wall-trees are to be pruned after one year's growth from planting, adapting them to ſeveral ſuppoſed caſes, which can ſcarcely happen, if your trees are properly managed the firſt ſummer; but as it is poſſible that they may happen, I ſhall proceed.

Suppoſe the tree has produced no good wood-branches, but ſome few buds, ſpurs, or ſmall fruit-branches. If the bark looks green, you may let it ſtand another year; as trees, particularly on walls, often recover, tho' weak. First caſe.

One wood branch on the top: ſhould you ſhorten this, it would raiſe your tree too high on the wall; ſo cut it off, and you may expect good branches in another year from the ſtem, below the part it ſprung from. Second caſe.

Third case. One wood branch from one ſide of the tree: you may either cut it off, or head down the tree to this branch. If it is of a proper height for training your tree from, then ſhorten its two lateral eyes on the oppoſite ſides, as directed in heading down.

Fourth case. When two good wood-branches or three are on the ſame ſide, cut the tree to the one that is beſt placed, taking off the others, and ſhortening this at the place where you have one eye above, and one below the branch. You may reckon on greater ſucceſs the enſuing year.

Fifth case. When two wood-branches are produced, one on each ſide of the tree, ſhorten them equally to a few inches, leaving the eyes as in N°. 4.

Sixth case. If your branches are produced two on each ſide, and the tree vigorous, ſhorten the two undermoſt to ſeven or eight inches, leaving the laſt bud in the undermoſt part of the branch on each ſide of the tree, and ſhorten the two uppermoſt branches to two eyes each, placed as in N° 4.

Seventh case. Three branches on each ſide, leave the two loweſt, if equal, or nearly

nearly ſo, as long as you can: ſhorten the ſecond pair more than the above, leaving their eyes as N°. 4, and prune the laſt pair as N°. 4.

If the branches are unequal in number and ſize on the oppoſite ſides, reduce them to an equality, or nearly ſo, and prune them as above directed. To give more caſes isneedleſs: from the above directions the reader will perceive, that the intention is to procure a ſufficient number of branches to form a regular head; and when once this is obtained, it is ſcarce poſſible to go wrong in the training of the tree. Eighth caſe.

The directions that are here given, are adapted to trees when they have been planted as formerly directed, and are of one or two years growth. If your trees were older than one year before planting, and have ſince heading down ſhot vigorouſly; as is often the caſe with pear-trees on free-ſtocks, plum and cherry-trees; reduce the branches to an equality on each ſide, or nearly ſo. Two ſtrong branches on one ſide, may be looked on as equal to three weak ones on the other; only remember to prune ſtrong branches ſhorter than weak ones:

leave the loweſt branches longeſt, and ſhorten the reſt more and more as you approach the higheſt, which muſt be ſhortened moſt of all. Leave always the laſt bud of every branch pointing to the place where you incline it ſhall puſh, to fill an empty ſpace next year; and by attentively obſerving the effect of your pruning annually, after it has been continued for ſome years, you will always be enabled to foreſee the figure of your tree the following ſummer. If ſuch trees ſhould produce their branches in a regular manner; that is to ſay, the undermoſt, longeſt, and moſt vigorous, and the others gradually and equally leſs as they aſcend; preſerve the whole, tying them horizontally to the wall, at ſuch diſtances as each kind requires. This is a happy beginning, you will ſoon have a handſome tree, and you have reaſon to expect plenty of fruit in due time. In peach, apricot, and nectarine trees, the wood-branches muſt be ſhortened as above directed; and in pruning of them, you muſt have a conſtant regard to a regular ſucceſſion of wood-branches, by which you can only ſecure fruit-branches: for if you neglect this practice,

tice, the center of your tree will at length be made up of long barren ribs or ſpars, and the only flower-buds will be a few weak ones at the extremity of the branches, which will run a very great riſk of being killed by the cold.

Apple-trees on paradiſe-ſtocks, and pear-trees on quinces, may have their branches much ſhortened, in the manner that has been directed for treating trees after one year's growth, in order to provide for a regular head. After this is obtained, as they produce but little wood, no great pruning will be required, if the ill placed gems are rubbed off, and all irregular branches cut out in the growing ſeaſon; which is the moſt effectual manner of training trees, when the time can be ſpared, and neceſſary attendance can be given.

CHAP. XVII.

Containing ſome Directions for managing and Summer-Pruning of Fruit-Trees the ſecond Year after Planting.

SUppoſe now the ſecond ſpring after planting arrived, and that your trees have begun to ſend forth ſhoots in the firſt growth, rub off all buds that appear on the fore and back-part of the branches; encourage good wood-branches that are properly placed, and direct their ſhoots to the places where you incline they ſhould grow, ſtrengthening them by deſtroying any ill placed rivals that appear. If the good well placed branches are too numerous, reduce them to ſuch a number as may be required; but rather leave too many than too few, in caſe of accidents deſtroying thoſe that remain.

SECT. I. If during the firſt growth, any branch becomes too luxuriant in the middle of the tree, pinch it, or cut it to ſuch buds as point to the places where wood-branches are required; and in the ſecond

ſecond growth, you may generally depend on their being produced.

SECT. II. Pinching or nipping of branches may be practiſed till the middle of June; if it is put in practice later than this, the branches produced from it will not become ſtrong enough before the approach of winter.

Continue the pruning through ſummer and autumn; for by taking off ill placed branches, and deſtroying luxuriant ones, you convert the whole force of vegetation in the tree to ſtrengthen the good branches, as well the wood as the fruit-branches.

SECT. III. If the ſummer-pruning is practiſed with care and judgment, there will require little elſe to be done in the winter-pruning, but to reduce to regularity the branches that are properly placed, and to ſhorten them in ſuch a manner, as to provide a new ſet of wood and fruit-branches for the enſuing year. Should luxuriant branches ſpring from the fore-part of any branches during the firſt growth, by cutting them off to the thickneſs of a crown-piece, you will often make it produce too lateral fruit-branches in the ſecond growth.

SECT. IV. In many kinds of pear-trees the wood-branches produce ſpurs all round, that continue to bear for many years. Theſe in ſeveral pear-trees may be encouraged, even on the fore-part of the branches, as they will certainly bear. But in ſome kinds, tho' they have at firſt the appearance of fruit-buds; yet afterwards, as if Nature changed her purpoſe, they puſh ſhoots with great vigour in the ſecond growth, and produce luxuriant branches. In ſuch kinds they ſhould be rubbed off as they appear. Sometimes when the trees hold badly, that is, when few fruit ſets, or rather ſucceeds the bloſſoms, the flower-buds that ſhould remain to the following year bloſſom in the ſecond growth, which hurts the tree; and the fruit produced are uſeleſs, for they neither come to perfection nor ripen. Whenever the flowers of ſuch begin to expand, cut off the ſpurs that ſupport them, cloſe to the ſurface of the trees.

SECT. V. Plum-trees produce bearing-ſpurs in the ſame manner, which ought to be treated as thoſe on pear-trees; for in many kinds of plums they prove great bearers for ſeveral years.

SECT. VI. In cherry-trees there will ſeldom

ſeldom be occaſion for ſhortening any of the branches, provided ſuch as are well placed be properly trained to the wall as they are produced. Whatever irregular branches make their appearance through the ſummer, ought to be treated as is already directed for the other kinds of fruit-trees: only it may be obſerved, that if fore-right ſhoots are permitted to grow through the ſummer and autumn, many fruit-buds will be found placed round their ſhoots; and if you cut over the branch a little above theſe, you may reckon on their producing plenty of fruit the next ſeaſon. But take care not to permit them too long, from a greedineſs for the fruit, as they certainly ſpoil the look of your trees: and if they are allowed to become large, they rob the well placed branches of their nouriſhment; and the wounds that are inflicted in taking them off, may endanger the life of the trees.

CHAP. XVIII.

Gives Directions as to the Method of Winter-Pruning after the ſecond Year's Growth.

THE earlier in the ſeaſon that this pruning is finiſhed, ſo much the better; for tho' trees do not ſhoot in length, yet they certainly grow groſſer in winter.

SECT. I. In peach-trees, ſuch branches as are ſmall, of a moderate length, with double or triple eyes, ſhould be carefully preſerved; and being properly laid on the wall, let them be carefully tied to the wires. If any of them are weak at top, or very long, they may be ſhortened in ſuch a manner, as will beſt contribute to an elegant ſhape and the good bearing of the tree.

SECT. II. Some of the branches that are groſs, and of conſiderable length, and have only ſingle eyes, may be cut over to four or five eyes; for tho' the trees, by ſuch pruning, may not appear ſo beautiful, yet you thereby provide for bearing, and ſecure

cure a ſucceſſion of uſeful branches in your tree.

SECT. III. Nectarine-trees may be pruned in the ſame manner as peaches; as alſo apple-trees, if you plant any of thoſe on your wall that are grafted on free-ſtocks.

SECT. IV. In apricot-trees, the fruit-branches may be preſerved in the ſame manner as in peaches; but the wood-branches may be left longer; for as the apricots grow more vigorouſly, more room has been allotted them.

SECT. V. Perhaps it may help to underſtanding of the ſubject of pruning, to obſerve, that the life of fruit-trees may very properly be divided into their growing ſtate, their bearing ſtate, and their decaying ſtate; for pruning may be ſo managed, as to have a conſiderable influence on the two former of theſe.

SECT. VI. Theſe three ſtates are obſervable in every kind of fruit-tree, but remarkably ſo in pear-trees on free-ſtocks, apple-trees on crab-ſtocks, and ſome kind of plum-trees. Theſe kinds produce wood-branches ſucceſſively for ſeveral years, till the trees are high, and their heads widely extended; then the branches which they produce

quent year, with the ſeveral kinds of wall-trees, till they come to the bearing ſtate, when they produce but few wood-branches, and conſequently advance little in bulk; ſo that after this they will require but little more wall-room.

SECT. XII. And now, if you guard againſt luxuriant or irregular wood-branches in the middle of your fruit-trees, planted at the diſtances I have mentioned; if you place the branches horizontally, at the diſtance from four to eight inches from one another, adapting the intervals between the branches to the largeneſs of the leaves and ſize of the fruit; you will be eaſily able to manage them by the directions that are given.

SECT. XIII. But to ſuch as have little wall-room, and yet incline to have a number of kinds of fruit on a few trees, I would adviſe the grafting or budding of ſeveral kinds on the ſame ſtock. Thus you may have pears of every ſeaſon on the ſame tree, by grafting a Crawford, a Scots Carnuck, and an Achan, on the ſame ſtock; or a jargonelle, beurre du roy, and Saint Germain.

In plum-trees you may obtain the ſame.

Thus

Thus a white primordian, a green gauge, and Saint Catharine, may draw their nouriſhment from the ſame roots; or ſeveral of the beſt winter apples may be grafted on the ſame ſtock for planting on the wall, as ſummer and autumn apples thrive and bear well enough in the open air in many places of Scotland. Theſe may be a golden pippin, gray leadington, and golden renette, or any other kinds the planter pleaſes.

SECT. XIV. But beſides the method of training trees to a wall, which I have recommended; another method of training and pruning of wall-trees may be practiſed with ſucceſs; nor will it be difficult to the reader, after he underſtands the directions I have given: for you may eaſily confine your trees to twelve feet, even tho' your ſoil be rich; and to nine or ten feet, if a light and poor ſoil. To obtain this, it is only required to ſhorten every year the wood-branches to ſix or ſeven inches, taking care in the growing ſeaſon to place them properly, till in a courſe of years you obſerve your trees every where to produce bearing-branches; for the frequent cuttings bring

bring your tree from a growing to a bearing ſtate, and then the trouble will be only deſtroying ill placed branches in ſummer.

SECT. XV. But ſhould your tree, notwithſtanding your judicious pruning, perſiſt in growing luxuriantly, and refuſe to bear, take it up, prune its roots ſhort and replant it, and you will ſometimes ſee it, even the year after, bear plentifully.

SECT. XVI. Another method is, you may dig the border round it, in a ſemicircle, at a proper diſtance, and cut off all the roots that grow beyond your trench: take them out of the earth, and then fill in the ſoil as before, making up your border in a proper manner. This anſwers full as well as the firſt method, nor does it ſo much endanger the life of the tree.

Directions for a variety of caſes are to be found in Monſieur Quintinye; and this part of his works ought to be ſtudied by every one who is ſollicitous of underſtanding this method of pruning. I refer my reader to the ſecond part of his works. But as this ſubject is truly

truly intereſting, I ſhall endeavour to give a ſhort account of the doctrines of the beſt writers on the ſubject in the next chapter.

SECT. XVII. As there is a very great variety obſervable in the manner of growing in the ſeveral kinds of fruit-trees; and as the knowledge of what is peculiar to every ſort, enables us to manage them properly; I ſhall take particular notice of what ſeems to me moſt uſeful in the deſcription of each ſpecies, ſo as to inſtruct my readers what kinds to make choice of for walls, what kinds for eſpaliers, what ſorts are preferable for dwarfs; then I ſhall take notice of the trees proper for ſtandards, and mark out the kinds that are fitteſt for orchards, more particularly in the northern parts of Britain.

SECT. XVIII. Before I take my leave of this ſubject, I cannot help taking notice of a common manner of pruning wall-trees. The wood-branches that are produced, or ſhoot directly from the fore-part of the branches, are left on the tree till the time of the winter-pruning, and then

then cut to the length of an inch or two; by means of which, the well placed branches have been ſtarved through the ſummer, and next year ſuch a quantity of wood-branches are produced from the ſtumps, as ſhades the whole tree through the ſummer; and theſe are pruned next winter longer than the year before, which lays a foundation for the deſtruction of your tree, by an uſeleſs growth of luxuriant branches; ſo that this can only be put in practice on cherry-trees, and the ſtumps ſhould not be permitted, even on them, for above two or three years at moſt.

CHAP.

CHAP. XIX.

Containing ſome Obſervations which will explain the Riſe and Progreſs of the Art of pruning Wall-Trees, &c.

I Shall begin with the works of an author who is generally acknowledged to have been the inventor of the art, and the firſt judicious improver of fruit-gardens. It is Le Genre, parſon of Henville, who, to the talents of a curious and accurate obſerver, joined thoſe of an elegant and ſenſible writer. His book is intitled, *La Maniere de cultiver les Arbres Fruitiers.* I ſhall endeavour to tranſlate his expreſſions literally. He informs us, that he was particularly fond of wall-trees and dwarfs, and was the firſt who fell on the proper method of making them ſucceed.

He had early in life indulged a paſſion for gardening; and after he had obſerved all his life-time, at the deſire of his friends, he communicated the reſult of the whole in old age, when he had become expert in the art by great experience.

He ſoon became ſenſible of the ignorance and extravagance of his contemporaries; on which he ſtudied the nature of fruit-trees, and profited by his obſerving of their manner of growth; and conformable to this, he ſucceeded in training of wall-trees.

He acknowledges, that he was much aided by his invention of grafting pear-trees on quince-ſtocks ſucceſsfully, which he firſt recommended to the curious as profitable, and preferable to other kinds of ſtocks.

He tells us, that in his manner of planting, wall-trees ſometimes bore fruit the firſt year, and were in a perfect bearing ſtate by the fourth or fifth year. The firſt is a ſure proof that he did not head down his trees after planting; and we would conjecture from the ſecond, that he commonly cut out many of the wood-branches in the courſe of his pruning. But let us proceed with our extracts from the work of a candid writer, who has communicated the reſult of fifty years experience in the fruit-garden.

He adviſes to prune fruit-trees from the end of February to the end of March.

His

His method was to begin his tree from a ſingle branch, placed perpendicular on the wall: this was to be left longer, or ſhorter, according to its own ſtrength and that of the tree. The other branches are to be ranged on each ſide, beginning to place the firſt horizontally, ſo low as within half a foot of the ſurface of the border. The other branches are to be laid on the wall, aſcending gradually without any curve; ſo that the point may always be placed a little higher than the root of the branch. No branches are to run acroſs each other, or to be placed too near one another. The diſtances between the branches are to be determined from their number and the vigour of the tree. In order to keep the tree full, he prunes ſhort a branch between two long ones, in both wall and dwarf-trees. This, according to him, prevents confuſion, and keeps the trees from aſcending too quickly, and extending too faſt on the ſides, which they naturally do, when all the branches are pruned of an equal length.

Great judgment is required in pruning, which muſt be adapted to the nature of

each tree, ſo as to preſerve it in a fruitful and vigorous ſtate.

A great variety which is obſervable in pear-trees, requires different methods of pruning. In particular trees the branches muſt be cut ſhort, when they are too vigorous. In ſome, the young wood muſt be cut out, to encourage the bearing of the old: in others, the old wood muſt be pruned ſhort, or cut out, when it is grown effete, and young wood encouraged to ſucceed it. In ſome kinds of trees, it is ſufficient to deſtroy ſuch branches as occaſion confuſion.

Let the gardener be cautious not to hurt the bearing wood in the center and lower parts of his trees; and theſe are beſt preſerved, by pruning ſhort the upper branches of the tree, which ought particularly to be attended to in peach-trees; for if they are not properly kept low by pruning and rubbing off the buds, they will be ruined in ſix or ſeven years; whereas, if they are properly managed in pruning, they will laſt twenty years, or more.

Cut off all late branches, unleſs ſuch as are neceſſary to the beauty of the tree.

Shorten

Shorten all luxuriant branches to ſtrengthen the branches that are weak.

Preſerve carefully the main ſtem, which grows perpendicular, and ſhorten it every year, ſo as ſtill to preſerve it the ſtrongeſt part of the tree, as it maintains its ſhape. Shorten the lateral bearing branches, cutting immediately above a leaf-bud, ſo as to ſtrengthen their fruit-buds, and fit them for bearing. Encourage not too many bearing branches, as the trees are often hurt by too much bearing, and the fruit on ſuch trees do not come to their proper degree of perfection.

Prune peach-trees laſt of all, at the time when you can diſtinguiſh the flower-buds; for if the tender branches are pruned too early, they are apt to ſuffer from the froſt, which will oblige you to prune them a ſecond time.

In dwarf-trees, ſhorten vigorous branches, and ſtop ſhort thoſe that are weak, in order to render them ſtronger: cut cloſe to the tree all uſeleſs branches. If the tree does not grow of the ſhape you deſire, conſtrain it by tying it to a model, which may give it the ſhape required.

Plum and cherry-trees annot be kept regular as dwarfs.

Le Genre underſtood and practiſed ſummer-pruning to good purpoſe: he alſo put in practice that of pinching ſtrong ſhoots, in order to fill empty ſpaces on the walls; and in the figure of dwarf-trees, by means of ſome of the good branches that this made them produce.

He obſerves, that in a vigorous tree, reſtraining the growth too much by rubbing off buds, pinching, or cutting off branches, the flower-buds which ſhould be nouriſhed for producing fruit next year, are by the efforts of the ſap forced to blow; by which they are ruined, and the bearing branches much hurt.

A particular attention ought to be paid to the kind of pear-tree which is pruned, becauſe the branches of ſome kinds do not produce bearing ſpurs ſo readily as others; ſuch are the rouſſelet, cuiſſe, madame, and jargonelle. All of the above kinds ſhould be frequently pinched, with a view of making them produce numerous branches to fill the wall, &c. Peaches and apricots muſt have their branches pinched and ſhortened

tened for the ſame reaſons, as they are apt to leave the lower part and center bare; and when they are permitted to grow with too much vigour, the quantity of wood-branches which they produce, ruins the fruit-branches, and prevents the tree from bearing.

When the trees on walls get to the head of the wall, or dwarfs grow to too great a height, he adviſes to cut them down, and train the trees anew.

The above are the chief articles to be found in the book of Le Genre: from which it appears, that his method is taken from having obſerved the efforts of nature, and that his practice was as much conformed to her plan as he could contrive it. He declares againſt doing violence to nature; he obſerved with attention; he reaſoned juſtly; and many of his directions are founded on the conſequences of what he had obſerved. It is probable, that his walls were high; for he did not allow any great diſtance between his trees on the wall.

The reader will find many uſeful obſervations in his book, which I cannot pretend to inſert; ſo I ſhall conclude with ob-

ſerving, that we here find the happy beginnings of the art of managing fruit-trees that is well ſuited to the operations of nature.

Having made my reader acquainted with ſome of the maxims in pruning of a writer of genius and abilities, I ſhall paſs over occaſional writers, in order to come to the works of the great Quintinye, whoſe extenſive practice enabled him to reduce pruning to an art, on certain principles, ſome of which we ſhall now conſider, that we may better underſtand a ſubject which this author had much laboured, and brought to a conſiderable degree of perfection. The views which Quintinye had in pruning were; firſt, to obtain plenty of beautiful fruit, and to have them earlier: ſecondly, that the tree might always look handſome, both in the foliage and without it.

He declares, that the whole of pruning conſiſts in making a proper uſe of the wood-branches, in forming both dwarfs and wall-trees: that to ſhape each properly, it is neceſſary to have a diſtinct idea of that degree of perfection and beauty which is peculiar to each.

The branches of a wall-tree ought to be equally expanded on each ſide, ſo as to

fill

fill the wall with bearing branches, and to keep it full.

His doctrine of branches, which he conſiders as ſtrong and weak comparatively with regard to the tree and each other, is particularly accurate, and is taken from nature; but it is by far too extenſive to admit of an abridgement; for which reaſon, I refer my reader to his book, vol. ii. I may make the ſame apology with regard to his method; the particulars of which, if tranſlated, would fill a volume; ſo that, after conſidering it attentively, I find myſelf neceſſarily confined to a few general obſervations on his doctrine. He differs from Le Genre in heading down his trees, in place of training them from one ſtem: and this practice would put both the ſhape and bearing of the tree more in his power. His ſhortening, or cutting out of ſtrong branches, would keep the tree more equal, and much conduce to its early bearing, and alſo to its taking up leſs room. His practice of cutting of particular branches to the thickneſs of a crown-piece, is in common with Le Genre; as is alſo pinching, rubbing off the buds, young ſhoots, &c. through the ſummer that were ill placed.

Cutting

occaſion confuſion, particularly in pear, plum, and cherry-trees, which would ſpoil their look and bearing. This Quintinye prevented by the equality which he preſerved among the branches till they arrived at the bearing ſtate, when the danger was over. Le Genre's obſervations and directions extend to many caſes that would occur in his method, which he well underſtood: and conſidered as an inventor, we have juſt reaſon to praiſe his attention and judgment.

Hardly has any thing eſcaped Quintinye in the growth of trees, however various they may be; his directions are adapted to a conſiderable number of caſes; and his principles, if well underſtood, will ſerve to direct the planter in every ſituation of fruit-trees that can poſſibly happen. The firſt book began, and the ſecond compleated the art of pruning; ſo that in no other work on the ſubject, is there any thing to be met with, but what may be found in either or both of theſe books. But it is time to quit theſe authors, and go on with our inſtructions with regard to the diſeaſes of trees, keeping nature in view,

view, which may be conſidered as the touch-ſtone of every book on the ſubject of fruit-trees.

We are determined to adopt no groundleſs prejudices, tho' they ſhould be authenticated by the teſtimony of the ancients, or confirmed by the authority of the moſt faſhionable writers of modern times: truth we purſue, nature cannot deceive, tho' man may err.

CHAP. XX.

Of the ſeveral Miſchiefs which befall Wall-Trees, with the Manner of preventing and remedying them.

SECT. I. WALL-trees are injured, or hurt, by a variety of cauſes. The loweſt branches have their leaves eat off by ſnails. To prevent this, keep green plovers or ſea-mews in your garden: ducks will ſerve the ſame purpoſe: it requires much attention and labour to pick them off.

SECT. II. The young buds in ſpring are devoured by mice, or the bark eat off the ſtem and branches in winter. Deſtroy theſe animals by laying poiſon, or ſetting

traps. Labour your borders, and roll your walks with a heavy rolling-ſtone: theſe methods will deſtroy or diſlodge them.

SECT. III. On ſouth-eaſt aſpects, if the weather is dry, and hot in ſpring and the beginning of ſummer, the leaves are crumpled and bliſtered, and the young ſhoots deſtroyed, particularly on nectarines and ſome delicate peaches: theſe ſeem quite deſtroyed in the beginning of ſummer, 'till in the ſecond growth they ſhoot weakly, tho' they ſeldom recover any tolerable degree of ſtrength. To prevent this, plant none of theſe on that aſpect where your ſoil is light and dry.

SECT. IV. Caterpillars are very deſtructive to the leaves and tender ſhoots in pear-trees, apricots, &c. Cauſe them to be picked off, and deſtroy butterflies of all kinds. Thoſe of the night are very prolific; and conſequently, the caterpillars which are bred from their eggs do much miſchief.

SECT. V. In Auguſt and September, the top-moſt leaves and young ſhoots of plum-trees are greatly infeſted with garden lice. To deſtroy theſe, waſh the branches frequently with cold ſpring-water, by means of a Dutch pump. Flies alſo

ſwarm

ſwarm on them, and hurt both the leaves and ſhoots. The cure is the ſame.

SECT. VI. Stone-fruit often gum at particular parts of the branches, and all beyond this dwindles and dies. Prune ſuch cloſe to the tree, or at leaſt to the ſound wood below, and ſupply their place by laying in the neighbouring ſhoots.

SECT. VII. In the claſs of pippins, the trees are hardened at particular parts of the branches, and deſtroyed quite through their ſubſtance. Cut off the dead part at the winter-pruning.

In ſome a ſcabby excreſcence deforms the branches, notwithſtanding which they bear well enough.

SECT. VIII. Sometimes the roots of your wall-trees are attacked below ground; and they dying, the tree ſoon follows: take it out and plant another.

SECT. IX. By tranſparent clouds forming into particular ſhapes, they act as lenſes or burning-glaſſes; ſo that by them the rays of the ſun are condenſed and darted with ſuch force, as to kill the tree in part, or wholly. This may properly be called ſcalding, and is moſt apt to happen when the trees are covered thick with dew, &c. If

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the miſchief that is done by it is only partial, the tree ſometimes recovers; but when it is much hurt, prune it down to the ſound part. This is what is called blighting, by ſeveral authors on gardening: the cauſe of it is as obvious as the harm it does, and yet you meet with much myſterious nonſenſe about it in many books on gardening.

SECT. X. Cold weather in the ſpring, kills the late ſhoots of the preceding year, on peaches, nectarines, &c. particularly by the particles of cold inſinuating themſelves when the tender ſhoots are full of ſap. To prevent this, prune the trees in October, and cut ſhort the wood-branches. But as at this time you cannot ſo well diſcern the proper fruit-branches, or their buds, you ſhould not prune theſe exactly till the end of March; I mean, ſuch of them as ſeem ſtrong enough for bearing the winter and ſpring colds.

SECT. XI. Early pruning is commonly recommended for weak trees, but is really proper for all. You may begin to prune your trees the end of September, and continue through the winter whenever the weather is favourable. When the fruit-buds

are

are ſwelled before pruning, many of them are rubbed off in untying, pruning, and retying of the branches: this is prevented by early pruning.

SECT. XII. The inſtructions given will, I hope, ſuffice for wall-trees.

I ſhall now proceed to the different ſhapes of trees which are really ornamental to the fruit-garden, and may be uſeful in it; on each of which, I ſhall endeavour to communicate the moſt uſeful knowledge in a plain and intelligible manner. But before the planter ſets about forming his plan, let him conſider that activity, ſkill, and diligence, is required to train and keep in order the ſeveral kinds, and that one ſeaſon's negligence may ruin the whole; whereas a cloſe attention may prevent this, and the taking care of them prove a conſtant and agreeable amuſement. Perhaps my reader would ſmile, ſhould I aſſert that genius is required for managing a fruit-garden: but he will hardly deny, that the poſſeſſor will ſucceed the better for taſte, attention, and judgment.

CHAP. XXI.

Containing ſome Directions for Planting, Pruning, and Training of Eſpaliers, or Hedges of Fruit-Trees.

THESE are rows of fruit-trees planted in a line on borders, and the branches trained horizontally to frames of wood or ſtakes, nearly in the manner that the branches of wall-trees are directed to be placed on wires againſt walls. They are called by the French writers *contre eſpalieres*.

SECT. I. How long it is ſince theſe have been introduced into the European gardens, is not eaſy to be determined. Quintinye has obſerved, that they were grown into diſuſe in his time, and prefers dwarfs to them.

Mr. Miller of Chelſea has warmly recommended eſpaliers; and by his advice, he has influenced many to make trial of them. They are at preſent to be found in many gardens; tho' for the greater part they are ſo injudiciouſly planted and trained as to make but indifferent figures, and

and commonly prove but very indifferent bearers.

SECT. II. They are generally uſed as hedges in kitchen-gardens; and the following reaſons are given for introducing them: They defend whatever is planted or ſown in the quarters from ſtorms, and ſcreen them from the view of thoſe who are in the walks.

SECT. III. Mr. Miller is of opinion, that they are preferable to dwarfs for the following reaſons: Firſt, That the ground is eaſier laboured on each ſide of them, than it is round the ſtems of dwarf-trees. Second, That they look handſomer. Third, That they bear better.

SECT. IV. But even allowing the truth of the above reaſons, if we conſider the difficulty in training and pruning them, the expence of the frames, &c. the great attendance that they require, their often dying down in part, or wholly; that they are more preyed on by black flies, beetles, or clocks, &c. than any other form of trees; we ſhall readily give the preference to dwarfs in high expoſed ſituations, and to half-ſtandards in low ſheltered places. But tho' the above are true in general, yet

I readily acknowledge, that apple-trees on paradiſe-ſtocks make a beautiful eſpalier; they are eaſily trained, require little pruning, and bear plentifully. Pear-trees on quince-ſtocks will always look well, and bear well, where the ſoil and ſituation favours. But either apple or pear-trees on free-ſtocks are difficult to train, and ſcarcely can be brought to bear. With great difficulty can we keep them regular, ſo as to preſerve an uniform appearance. However, I am of opinion, that by attention, and managing them ſkilfully, both may be effected: and certain it is, that beautiful eſpaliers on borders oppoſite to wall-trees, make a fine appearance; nor is it eaſy to form, even in fancy, a prettier walk than theſe muſt make, when regularly ranged on each hand, and covered thick with flowers or fruit. I now come to give directions how they are to be planted, pruned, and reared, till they come to the bearing ſtate.

SECT. V. Make your borders from eight to twelve feet broad; the firſt in the richeſt, the laſt in the pooreſt ſoil. If the ſoil is wet, raiſe your borders in the middle, by a gradual aſcent from the water-table on each

each ſide to the line of your trees. The diſtances of the trees from each other may be the ſame as thoſe I have directed for planting of wall-trees. Make your pit ſhallow, and place your tree high in planting. Let your roots be pruned regularly, and extend them nearly at equal diſtances all round the tree: fill in the earth carefully round the roots, and make up your border as before planting; for in ſuch ſoils no panning is neceſſary; only after planting place turf, dung, or litter round the root of your tree, keeping the two laſt named at ſome diſtance from the ſtem of the tree.

SECT. VI. When the ſoil is light and dry, the borders may be made of the greateſt breadth, and the ſurface of them juſt the reverſe of the above mentioned; for they ſhould be low in the middle, and riſe gradually to the edge of the water-table on each ſide. The trees may be placed deeper in the pits than on the other borders, and the diſtance of the trees may be as much diminiſhed as the ſoil is worſe. When the tree is planted, pan and lay dung round it.

SECT. VII. The trees, which are ſuppoſed here to be only of one year's growth,

may be headed down in ſpring to two buds, that are placed one on each ſide of the tree, that anſwers to the line of planting on the border. During the growing-ſeaſon rub off all buds or ſhoots, except what are produced from theſe ſides of the trees. Fix the branches to ſtakes as they advance, keeping them always in the direction of the line of the eſpalier. After one year's growth they may be pruned in the ſame manner as wall-trees, and the branches trained horizontally in like manner: only conſider, that both ſides of an eſpalier muſt be treated as the fore-part of wall-trees, through the whole ſummer. Proceed in pruning and training them annually, preciſely in the ſame manner as is directed for wall-trees; and when they have ſtood three or four years, if they are conſiderably advanced in growth, place behind the trees a wooden frame, or continue to drive in ſtakes as they advance: to theſe, or the frame, the large branches may be made faſt, by tying with willows or birches, and the ſmall branches may be tied with baſſes or ruſhes.

SECT. VIII. Willows or birches, when tied in ſuch a manner that the knots do not

not ſlip, will laſt three or four years. Baſſes, even the beſt of them, muſt be renewed annually; and ruſhes every five or ſix months.

SECT. IX. Such ſtone-fruit as ſoon produce ſpurs, and come in a few years to a bearing ſtate, are moſt proper for eſpaliers; neither is it any diſadvantage that they grow vigorouſly, provided you give them room enough: moſt kinds of cherries may be planted to advantage againſt eſpaliers. Several kinds of plums, as they come to bear in a few years after planting, are very fit for eſpaliers. Such apple or pear-trees as are apt to ſend forth luxuriant branches from the ſtem, or either ſide of the large branches, are unfit for eſpaliers; for when they are neglected but for one ſeaſon, they hurt the tree, and the cutting them off ſpoils the look of the eſpaliers; for the fore or back part of a tree full of wounds looks diſagreeable. Summer and autumn fruits ſhould be planted on eſpaliers; for winter fruit, unleſs the ſituation of your garden is low and warm, will not acquire the proper degree of maturity, as they ſeldom come to perfection.

SECT. X. Look carefully after your eſ-

paliers through the whole ſummer, and prune them in ſuch a manner as to free them from all uſeleſs wood, and finiſh the pruning of them early in autumn; for if the uſeleſs branches are permitted till that ſeaſon, the high winds often break the tyings, and hurt the branches; whereas the reducing them to leſs bulk, will give them a better chance for keeping faſt to the ſtakes or frame.

SECT. XI. Fruits that grow on eſpaliers are a little later of ripening than ſuch as are produced on dwarfs; unleſs ſuch as are placed on the loweſt branches, and near the ſurface of the ſoil, where they enjoy a greater degree of warmth, from the action of the rays of the ſun, and the re-action of the particles of fire that are conſtantly kept in motion through the ſubſtance of the ſoil in ſpring, ſummer, and autumn.

CHAP. XXII.

Containing ſome Account of Dwarf-Trees; what they are; how planted, pruned, and reared.

DWARFS, when planted in the open air, are ſuch fruit-trees as have been headed down from three feet high to one foot above the ſurface of the ſoil. They have their branches trained regularly all round their ſtems, nearly at equal diſtances; and their heads may either be open in the middle, reſembling a bowl, or equally full, reſembling at top a hemiſphere or muſhroom, as the pruner pleaſes.

SECT. I. No ſmall ſkill is required in managing the firſt kind; for if in pruning they are trained too open, the branches fall down either with their own weight, or with the weight of the fruit; nor is it then an eaſy matter to labour the borders round them: and in the ſecond kind, the greateſt attention muſt be given to encourage the ſide-branches, and moderate thoſe that are permitted to grow up in the middle. When theſe kinds of dwarfs arrive at a bear-

a bearing ſtate, they ought to exhibit a regular ſpread head, rounded off above; for if they approach too near a conical figure, or aſſume it, the middle of the tree will advance too faſt, and ſtarve the ſides: and if you train the open dwarfs too upright, they grow too vigorouſly, and look unſhapely, when they are on free-ſtocks.

SECT. II. The borders for dwarfs may be made up, and the trees planted in the manner as directed for eſpaliers.

The diſtances between apple-trees on paradiſe-ſtocks, and pear-trees on quince-ſtocks, may be twelve feet. The diſtance of apples on free-ſtocks may be twenty feet; and that of pears on free-ſtocks may be twenty-five feet. Quinces may be planted at the ſame diſtance as the firſt, and medlars as the ſecond.

Thoſe who chuſe to plant mulberries may ſuit the diſtances to their plan, tho' the trees will make ſhift with twelve feet. The above are the only trees fit for being planted in the open air, as dwarfs, in Scotland. Plum and cherry-trees will ſucceed better as half-ſtandards.

SECT. III. The trees which you plant as dwarfs, may be one, two, or three years old

old from grafting or budding. They ſhould have a ſtraight ſtem, a clear and ſhining bark; they are the better for never having been headed down: the proper height to head them at, is two feet. Such buds as are properly placed round the ſtem may be encouraged; all others ought to be rubbed off: nor will it be proper to allow above four branches the firſt year. Let theſe be as near an equal diſtance from each other as can be; ſuch are beſt that grow from the oppoſite ſides of the ſtem. In October, when the growth is over, ſhorten the four branches to as near an equality as poſſible, and leave the laſt bud on the outſide of each branch. None of the branches ſhould be left above three or four inches long. If any one of the branches have grown nearly perpendicular, cut it down to within a little of the part where you obſerve a bud pointing outwards. If ſome of the branches are ſtronger than others, ſhorten them moſt which are ſtrongeſt. Next year, during the growth of the tree, rub off all buds that appear on the inſide of the branches; but permit ſuch as come to the outſide, to remain till the

the pruning ſeaſon in October, unleſs luxuriant branches appear; in which caſe, deſtroy them directly, wherever they are placed.

SECT. IV. Suppoſe the pruning-ſeaſon now arrived after the ſecond ſummer's growth, you muſt view in your mind the propereſt ſhape for your tree at preſent; and likewiſe forecaſt in your imagination what will be the effect of the growing-ſeaſon, ſo as to provide for its figure the ſucceeding year.

SECT. V. Prune your wood-branches that are well placed to ſeven or eight inches, leaving the laſt bud always on the outſide. If you obſerve any variety, prune on a bud that points towards that part, and it will fill it next year with a good branch. The length of the branches is here ſet down at a medium; but in both apple and pear-trees on free-ſtocks, I have often obſerved that the new-ſprung branch generally makes a curve for ſome way, and then grows upright. To prune to the firſt outward bud of the upright all round, will generally form a fine open dwarf with a regular head; nor need you in ſuch caſes mind

mind the length of the branches, but prune your tree as Nature directs: ſeldom do we err, when we take her for our guide.

SECT. VI. If the tree is more vigorous on one ſide than on the other, prune down the vigorous ſide as much more than the weak ſide, as will bring them againſt another year to an equality; or you may prune ſome branches ſo, as to loſe part of the ſap, in the manner that is directed by Mr. Quintinye.

SECT. VII. When there are fruit-branches on the tree at pruning that can be left on without disfiguring the tree, you may ſafely permit them to remain: ſhould they diſappoint you by not bearing, they can be cut off any time afterwards, without hurting the ſhape of the tree.

SECT. VIII. Thus proceed with your dwarfs in ſummer, and at the pruning-ſeaſon, till the trees have abated much of their vigour in the wood-branches, and give marks of approaching bearing by their numerous fruit-branches. Then you may expect to reap the fruit of your labour; and after this, you will have little to fear, unleſs ſome luxuriant branches ſpring up in the middle of your trees: theſe you muſt

cut

out out whenever they appear; and keep the fruit-branches at ſuch diſtances from each other, that they may not gall or hurt one another, when blown about by wind.

SECT. IX. The above directions are proper to be obſerved in managing pear-trees or apple-trees on free-ſtocks. Pears on quinces will need little pruning, after you have provided a head, as they ſoon come to bear, nor do they become troubleſome by their ſize; ſo you may either train them open, or full, as you incline: only remember, that pear-trees, when left to themſelves, acquire a conical figure, which will not be detrimental to ſuch dwarfs.

SECT. X. Apple-trees on paradiſe-ſtocks may be pruned ſo as to procure them a regular full head, as they ſoon ſet in for bearing, and produce but few wood-branches. It is apparent, that apple-trees, left to themſelves, aſſume the ſhape of a hemiſphere; ſo that, to obtain this, it will only be requiſite to weaken your tree by pruning, till it come to a bearing ſtate, in the ſhape required, which it will afterwards maintain.

SECT. XI. Whatever borders you deſtine

ſtine for eſpaliers in the fruit-garden, may be employed to better purpoſe in planting dwarfs. They are trained with little trouble, no expence; they look more handſome, bear better, and the fruit are generally more earlier than on eſpaliers: the air will be more free about them; nor do they ſo much ſhade the border on which they are planted, unleſs when they are trained too low.

CHAP. XXIII.

Containing Directions for planting and rearing of Half-Standards, ſo as to render them ornamental and profitable in the Fruit-Garden.

THESE may be either budded or grafted on the ſtocks, at the height of four feet; or they may be budded or grafted low, and trained to this height, before they are allowed to ſend off any branches. They may be either planted on walls, or in the open air.

SECT. I. I only treat here of the laſt; and ſhall firſt obſerve, that as breaks or plots of ground are often laid out in the fruit-garden, for the ſowing or planting of

kitchen-herbs, roots, &c. ſo fruit-trees may be planted in theſe. I would recommend half-ſtandards as the propereſt form, for the following reaſons: Firſt, The ground can eaſily be laboured round them. Second, Their heads may be ſo pruned and trained, as to acquire a regular and beautiful figure, without ſpreading too far, or injuring the undergrowth.

Many kinds of pear-trees on free-ſtocks, and likewiſe of apple-trees, planted and trained in this manner, will make a fine appearance, and bear plentifully.

Such as chuſe may plant in this way plum, cherry, medlar, and mulberry-trees.

SECT. II. Half-ſtandards may alſo be planted on borders to good purpoſe, for beauty as well as uſe.

No particular directions can be given: a good taſte will direct every planter where theſe may be placed to moſt advantage, ſo as to add to the propriety of a particular part, and promote the elegance of the whole.

SECT. III. Where the ſituation is low and warm, and the ſoil proper, ſome plum-trees planted as half-ſtandards, ſoon come to bear, amply reward your labour by conſtant

ſtant crops, and preſerve at the ſame time the elegant ſhape of their heads: you may plant ſuch at twenty-four feet diſtance from each other. A free open air is equally neceſſary to the growth of your trees and goodneſs of the fruit.

SECT. IV. Cherry-trees planted as half-ſtandards ſoon bear; and ſome kinds of them look very well, as they naturally form a fine regular, conical, or round ſpread head. But moſt kinds of fruit are ſo preyed on by ſmall birds, &c. when the fruit begins to ripen, unleſs when they are covered with nets, that little advantage is reaped by the crop. But if you incline to make trial of a few, keep the branches on their heads as regular as you can, by cutting out cloſe to the tree ſuch as are ill-placed, or croſs one another.

SECT. V. I need give no particular directions as to planting, pruning, &c. of half-ſtandards; the directions that are given for dwarfs, chap. xxii. may be followed: only let me conclude with obſerving in general, that theſe grow not ſo vigorouſly as dwarfs, and conſequently come to bear ſooner.

Having now finiſhed all that was intended on the planting of the fruit-garden, we come to give directions in what manner the borders are to be managed, ſo as to promote the growth and bearing of the trees, to render the fruit beautiful, and fill them with the moſt exalted reliſhes that the ſeveral kinds are capable of acquiring.

CHAP. XXIV.

Containing the Method of Labouring and Dreſſing the Fruit-Borders for the Benefit of the Trees and the Fruit.

IT matters not to what degree of richneſs you have brought the ſoil of the borders before planting your trees; if conſtant care is not employed to preſerve them in that ſtate, they will ſoon be exhauſted: for if they are neglected, weeds of various kinds ſpring up, grow vigorouſly, and by the nouriſhment which they draw from the ground, rob the trees.

SECT. I. Whatever ſeeds are caſually depoſited in the ſoil, readily take root: runners from the roots, or off-ſets from the

the weeds on the adjoining walks, find in the borders plenty of paſture, and multiply ſurpriſingly. Such is the appointment of Providence; and we in every caſe find Nature, in obedience to theſe, equally liberal to the caſual poſſeſſor, as to the favourites of human kind that are committed to her care.

SECT. II. Nature here obſtinately perſiſts in her purpoſes, in ſpite of our endeavours to oblige her to favour our deſign, and unremitting labour can alone avail. By means of this, while we deſtroy intruders in turning of the ſoil, or ſhifting its poſition, we expoſe new ſurfaces to the influences of the atmoſphere; and by the attraction that follows, the mould becomes replete with enriching particles, that give new life and vigour to the trees, and the proper flavour to the fruit.

SECT. III. It is now proper to conſider what may be effected by human induſtry. Our aim here is to keep the borders conſtantly in ſuch a ſtate, that they may be able to ſupply nouriſhment to the trees for their growth and bearing. This end may be anſwered by keeping them al-

ways in a ſtate of fallow; by means of which, they will conſtantly be attracting from the atmoſphere numerous nutritious particles; the whole of which may be reſerved for the uſe of the trees, when nothing elſe is permitted to grow on the borders.

SECT. IV. The fallowing will alſo render them free and open, by which they become pervious to the roots, are eaſily pervaded by the ſun-beams, and penetrated by the rain, diſſolved ſnows, &c. They will alſo abſorb the humid particles ever contiguous to the ſurface of the ſoil, and readily impart them again to the air, when acted on by the heat of the ſun. Thus a conſtant circulation of moiſture will be kept up in the ſoil, by which the ſalts muſt be diſſolved, and carried into the pores of the roots, &c.

SECT. V. But I forbear to purſue this ſubject any farther; the reader will find it amply treated of in the Theory of Agriculture, which will ſoon be publiſhed. We now come to the practice, which will probably prove the moſt intereſting part to many of our readers.

SECT. VI. Would you have thriving trees,

trees, and delicious fruit, never permit any kitchen-ſtuff, nor any vegetable whatever, to grow on your fruit-borders and rob your tree.

SECT. VII. Delve your borders at leaſt twice a year, in autumn and ſpring, taking care that the roots of your trees be not injured by the workmen. The oftener you turn the ſoil, by hoeing, &c. through the ſummer, the more will it be enriched.

SECT. VIII. Whenever weeds of any kind appear, hoe or paddle the ſurface: the deeper this is done the better.

Take up all ſuckers that grow from the roots of your trees, as they appear; for, if permitted, they exhauſt the ſoil and hurt the trees.

SECT. IX. Prefer dry weather for labouring your borders, particularly hoeing and paddling; but let not the weeds advance too far when the weather is rainy; nor neglect the delving in the proper ſeaſons, which are March and October, tho' the weather ſhould prove rainy or wet.

SECT. X. In authors we meet with many particular directions adapted to the management of wet and dry ſoils; but if either of theſe qualities is to exceſs, I

ſhould think ſuch a ſoil unfit for a fruit-garden; beſides, the ſeaſons often counteract the nature of the ſoils, i. e. a dry ſeaſon will cure a wet ſoil, and *vice verſa*.

SECT. XI. Compoſts of different kinds have been recommended by authors, for enriching the borders and ſtrengthening weak trees.

The materials of many of them are not eaſily procured, the manner of making them up is expenſive, and the applying of them laborious; and dung, aſhes, or other manures, will anſwer equally well, if they are laid on the ſurface after delving of the borders in autumn, and pointed down in the ſpring following: for wherever your trees are in an unthriving condition from the poorneſs of the ſoil, theſe applications in ſufficient quantities will certainly reſtore them. But this more properly belongs to the diſeaſes and cure of fruit-trees, with which I ſhall conclude this book in the following chapter.

CHAP.

CHAP. XXV.

Of the Miſchiefs which happen to ſuch Fruit-Trees as are planted in the open Air in the Fruit-Garden, with their proper Remedies.

SECT. I. DURING the firſt growth, the tender leaves and young ſhoots are preyed on by flies of different kinds; but the harm they do is ſmall, in compariſon of what is done by the aſh-coloured beetle or clock. This ſmall creature makes its appearance in the beginning of May; and if the weather continues warm and droughty, the number of them increaſes daily till the month of June, when they gradually decreaſe till about the middle of the month, when they entirely diſappear. They are particularly fond of pear-trees, plum and cherry-trees; they prey greedily on the buds of grafts: the leaves and the bark of the young ſhoots of eſpaliers, are generally infeſted with them. Their being kept immoveable, probably affords them an opportunity of reſting on them preferable to dwarfs. They are in

greateſt numbers about the middle of the day, the heat of which ſeems to give them life and ſpirits. When the weather is cold and rainy, but few of them appear, and ſmall miſchief is done by them in ſuch ſeaſons. Might not we reaſonably conclude from this, that watering the trees frequently, particularly about the middle of the day, with cold water, may be of uſe in deſtroying the inſects, and preſervin the trees? I have ſeen many young trees entirely conſumed by them; but after they have grown ſome years, they are in leſs danger, tho' the tops of ſome of the branches may be ſpoiled.

SECT. II. If after the leaves and bark have been eaten off for ſome weeks, new buds do not appear and ſwell, cut down the branches to ſuch buds as are properly placed and thriving, and the tree in the ſecond growth will regain its ſhape; and ſometimes the ſhoots will acquire a tolerable degree of ſtrength before the approach of winter. But the contrary is very often the caſe; for as they grow but weakly, they are not ſeldom froſt-bitten next ſpring: however, theſe accidents will be beſt remedied, and the conſequences prevented,

vented, at the winter-pruning; which, if performed in the manner as directed, will recover the trees in a few years.

Sect. III. It is obſervable, that ſuch trees as are in a weak way, are greatly preyed on by theſe and other creatures. Enriching your borders will ſtrengthen the trees, and ſo ſave them. I made my gardener try to deſtroy theſe ſcarabei, or beetles, by the fumes of burning brimſtone, which he told me was ineffectual.

Sect. IV. Whatever caterpillars feed on the leaves of wall-trees, likewiſe breed on the ſame kinds of trees in the open air, as alſo ſnails; but I have made mention of theſe already, when treating of the diſeaſes of wall-trees.

Sect. V. Neither is the apple-tree ſafe from inſects; water-flies lay their eggs on the leaves, the young inſect ſoon burſts its cover, feeds on the leaves till it grows up; then ſpins its web, curling up the leaf round it, to ſhelter it from the rain, and conceal it from its enemies, till it change its form, when it comes out to the open air, copulates, propagates its ſpecies, and dances till death. Theſe inſects are often

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ſo numerous, as not to leave a ſingle leaf on the trees that they ſix on. By encouraging ſmall birds to frequent your garden, you provide deſtroyers of theſe inſects, as they feed on them, and carry them to their young ones.

SECT. VI. The ingenious and laborious Mr. Reaumur has ſhewn that moſt inſects have their trachea, or windpipes, opening on each ſide of their bodies; that the ſtopping of theſe with oil, or water, certainly kills the inſects. This information may here prove uſeful; and the beſt method we can fall on, will perhaps be to waſh our trees frequently with water, by means of a Dutch pump, which will diſpoſſeſs ſome of theſe inſects, and deſtroy others.

SECT. VII. The reſtoring of trees thus injured, is by pruning down to vigorous eyes, as has been directed for pear-trees, &c. If the leaves are eaten off early in the ſeaſon, the wood of the ſecond growth is often good, nor is the ſhape of the tree injured. When appearances are favourable, leave the tree to Nature, who by her ſpontaneous efforts often repairs the damage,

mage, and reſtores the tree to vigour and beauty.

SECT. VIII. Scalding, gumming, ſcabby excreſcences, happen to trees in the open air, as well as to thoſe on walls: and theſe muſt be treated in the ſame manner as has already been directed, when treating on the diſeaſes of wall-trees.

SECT. IX. Fogging is much complained of, as if it were an endemical diſeaſe, that is only peculiar to ſome bad ſituations and unfavourable ſoils; but ſeldom will you meet with old trees any where without it, neither does it ſeem to injure the bearing of the tree: but conſidering that it is a paraſitical plant, it is more than probable, that it draws part of its nouriſhment from the tree, and conſequently muſt hurt its growth. That it makes the tree look ugly, is evident; and its cloſely covering the bark of the branches all round, will hinder both their perſpiring and abſorbing.

The cure is evident; rub it off.

SECT. X. Having taken notice of ſeveral accidents which befall fruit-trees, I now come to obſerve ſome particulars with regard to the fruit, their formation, increaſe.

creaſe, and maturity. The trees on a fruit-wall have this advantage over all others, that the fruit holds better than on any other trees, whatever their ſhapes may be.

SECT. XI. On the other trees in the fruit-garden, no matter what ſhape you give them, the fruits ſet at leaſt as well as the fruit in orchards; nor are they in ſo much danger of being blown down from the trees by high winds, after they become large. Almoſt every accident which happens to the trees, may befall the fruit; they are often ſcalded, nipt to death by cold, or deſtroyed by inſects. Often, tho' the bloſſoms are large and look well, no rudiments of fruit appear in the center. Sometimes the germ is well formed, and advances in ſize; hot weather hurries on the perſpiration, dries its ſubſtance, it ſhrinks and falls. At other times, the particles of cold inſinuate themſelves, and deſtroy their delicate ſtructure; they advance no further, but dwindle and die. In plums, even after they have grown to a conſiderable ſize, the air included in the center of the ſtone, being greatly rarified by the intenſe heat, burſts its cells, and occupy-

occupying a larger ſpace in the middle than it ought to do, the fruit ſhrivels, dies, and falls. This in Scotland is called fadging.

SECT. XII. In very dry ſeaſons, when the heat is violent, fruits decay and fall, even after they are conſiderably advanced in bulk; they begin to turn yellow or red, become dry and ſmall, and drop off.

SECT. XIII. When the ſeaſon is very wet and cold, the fruits are chilled, and many of them drop off. When the ſeaſon is wet and warm, they become very large, and few of them quit the trees till they are ripe. When the weather has continued long wet and cold, if hot weather happen, many of the fruit, particularly pears, are deeply gaſhed through their ſubſtance.

SECT. XIV. From ſudden changes, whether of heat or cold, if the degree is great, they are apt to ſuffer as well as animals; and ſuch changes being frequent in Scotland, during the time of bloſſoming, is often the reaſon of the ſcarcity of fruit.

SECT. XV. An equal conſtant ſeaſon is moſt favourable to fruit; and in ſuch, the greater the degree of heat, the better the quality of the fruit. If cold and wet prevail,

vail, the late fruit never come to maturity; neither are ſuch well taſted, that come to ripeneſs in ſuch unfavourable ſeaſons. Stone-fruit on walls, from too much rain, and ſudden changes to great heat, often crack in the ſkin, and form gapes even to the ſtone. The ſtones alſo ſometimes burſt open when moiſture over-abounds, the fruit ſwell greatly, become as it were dropſical, and never ripen or acquire a good taſte; ſuch fruit are neither pleaſant nor wholeſome.

Pears, from the ſame cauſe, are often gaſhed deep into their ſubſtance; but the quality of the fruit is not ſo much changed by it, nor is their taſte ſo much vitiated as in ſtone-fruit.

To mention more particulars would prove tedious; ſo I ſhall conclude with obſerving, that the fruit-garden ought to be laid out with all the elegance of a pleaſure-garden, for the ſake of walking, &c. or rather the fruit-garden may be conſidered as the moſt pleaſurable part of a fine garden.

I now come to an eaſier manner of obtaining fruit, and a more profitable manner of procuring plenty: the reader will eaſily

eaſily perceive that I mean, by planting of orchards. This ſubject properly belongs to farming, and may be conſidered as one way of improving ground ſo as to raiſe its value. I ſhall conſider it as ſuch; and while I have in view the profit to be raiſed from the fruit, I will at the ſame time give directions for planting the trees, ſo as that they may injure the undergrowth as little as poſſible.

OF

OF
ORCHARDS.

THESE are plantations of fruit-trees, generally intended to produce fruit for anſwering the demands of the neighbouring markets; ſo the kinds of fruit, and number of the trees of each *kind*, ſhould be ſuited to this.

SECT. I. But I propoſe not to give particular directions for any place; only I ſhall offer a few general directions for planting of orchards, which the reader may at his leiſure apply to particular ſituations.

SECT. II. The ſame conſiderations ſhould determine us in the choice of an orchard, as a fruit-garden; that is, it ſhould be low and warm, a good ſoil, well ſheltered, and of a proper aſpect. And as this is a matter of profit, it is proper to inform the planter, that where the trees ſucceed and bear well, no crop will bring ſuch a return. At the ſame time, the planter muſt not be impatient; for whoever plants

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an orchard, muſt lay his account with reaping little profit from his trees, till they are well advanced in growth. Pear-trees ſeldom begin to bear plentifully till they are above a dozen of years old from planting; and it is but few kinds that come to bear ſo ſoon. Apple-trees precede the pear-trees but little in bearing. Stone-fruit, ſuch as plum and cherry-trees, bear much earlier.

SECT. III. But while the trees are in the growing ſtate, the farmer may enjoy good crops of hay; for I would not adviſe ploughing among young trees. If he is afraid that the crops will exhauſt the richneſs of the ſoil, he may lay dung on the ſurface every autumn, or as ſoon as the hay-crop is carried off.

SECT. IV. I come now to the diſtances at which the trees are to be planted. Theſe may be varied as the planter inclines. Were we to plant all of the trees of one kind in an orchard; which perhaps would be the beſt way; pear-trees might be planted at ſixty feet diſtance, in the quincunx order, in the richeſt and beſt ſoil, and forty feet in the pooreſt, in which they will thrive and bear. An acre planted accord-

ing to the first, will contain fourteen trees: an acre planted at forty-two feet distance, will contain double the number of trees.

SECT. V. The greatest distance for apple-trees may be forty-two feet, which will contain twenty-eight trees in the acre: the least distance may be twenty-seven feet, which will receive seventy-one trees per acre. Cherry-trees may be planted at twenty-one feet distance, which will plant one hundred and seventeen trees on the acre.

SECT. VI. Plum-trees will do very well eighteen feet distant; but I need not trouble my reader with specifying the number for plums, as it is scarce possible to find a place where there would be a demand for the produce in fruit of an acre of plum-trees in a favourable season. The above distances are directed with a view to the conveniency of labouring the ground between the trees, as it is of great use to the trees when old, and very profitable to the possessor, by the large crops that it will yield.

SECT. VII. None of the trees should be allowed to produce branches lower on the stem than six feet from the surface of the

the ground, no matter whether the trees have been grafted low and trained to this height, or grafted ſix feet high on the ſtock. Trees in orchards ſhould be permitted to grow with any degree of vigour; for 'tho' ſuch trees as thrive beſt are longeſt of bearing fruit, they bear moſt fruit at laſt.

Sect. VIII. It is a common obſervation, that the fruit produced on orchard-trees are better taſted, and of a higher flavour, tho' neither ſo large nor well looking, as thoſe that are gathered from trees in the fruit-garden.

Sect. XI. Apple and pear-trees are preferred to all other kinds of fruit-trees, for orchards in Scotland; and with reaſon: the trees of both kinds are hardy, the fruit are ſaleable, and bring a good price.

Sect. X. Many fruit-trees are planted without any previous dreſſing of the ground; that is, a pit is made, and the tree planted in the ſame manner as foreſt-trees are planted. This practice ſometimes ſucceeds, and the trees take to growing, and thrive very well: notwithſtanding which, I would adviſe the planter who ſhall intend to

plant an orchard, firſt to bring the field into proper tilth, by frequently fallowing before planting of the trees, or rather to trench the ground as deep as the channel; for this, as well as the fallowing, will encourage the roots to extend all round into the laboured ground; for it is obvious, that fallowing and trenching render the ſoil pervious.

SECT. XI. If the trees are taken from your own nurſery, when they need only to be out of the ground for but a ſhort while, plant them with all the roots you raiſe; only cut ſmooth ſuch as have been broken in taking them up. Where your ſituation is ſo much ſheltered as to prevent wind waving, leave on part of their heads till the ſpring; then cut them over, ſo as to provide for a regular head. If your field is expoſed to high winds through the winter, head them down before planting; for they will take to growing as early next ſpring as thoſe whoſe heads ſhall be left on till the month of March, or beginning of April.

SECT. XII. After the ground has lain fallowed, or been trenched for the ſpace of one year, in the months of October or November,

November, plant your fruit-trees as has been directed; then pan and mulch them, and ſo let them remain till next ſpring, when you may point down the dung; and after raiſing graſſy turf, of four or five inches thick, from paſture-ground, place theſe with the graſs undermoſt, all round the roots of the trees cloſe to the ſtem. This is believed to preſerve the tender roots from being injured by the drought of the enſuing ſummer, and to ſave them from being hurt by the particles of cold inſinuating themſelves in the following winter.

SECT. XIII. Trees that are planted in orchards will need no pruning, except the taking out the dead wood, and cutting away the worſt placed of any two branches that croſs one another.

SECT. XIV. If your trees produce only fruit-branches, after ſtanding ſome years, and offer for bearing too early, head them down; and if your trees are well rooted, you may depend on good wood-branches being produced, which will extend your tree, and render your future crops more plenteous.

SECT. XV. Plant only ſuch trees as are hardy and good bearers; and even of thoſe, make choice of ſuch kinds of fruit as are moſt marketable: what pleaſes the eye, is often preferred to what is truly good, and pleaſes the palate.

SECT. XVI. Variety of kinds is neceſſary to keep up the character of your orchards. In order to obtain this, ſome of the beſt kinds ſhould be planted, tho' many of them are no extraordinary bearers.

SECT. XVII. Summer fruit, if the ſale is ready, or where you are ſure of purchaſers, bring the moſt money. Many trees that bear early kinds, grow very large, and bear great quantities; but let the planter keep in mind, that they continue but a ſhort time in a ſtate of maturity, till they ſpoil, and by a very little delay are entirely loſt.

SECT. XVIII. Autumn fruit in general are better than ſummer fruit: they have this advantage, that they may be kept when ripe much longer than the preceding, which renders them more valuable. When you are ſituated at a diſtance from the markets, a much greater number of trees of theſe kinds ſhould be planted than of the preced-

preceding kinds, as the ſmall fruit is now exhauſted; and at this time, there is a great conſumption of what the orchard produces; for the idle world are then moſt ſocial, and the fruits of autumn are pleaſing to moſt palates.

SECT. XIX. Winter fruit are poſſeſſed of the higheſt degree of excellence that any kinds of fruit are capable of acquiring; and as they keep for ſome months, they are preferred by the merchant to either of the preceding kinds that formerly made their appearance.

Apples, particularly, will keep ſo as to be ſerviceable for the kitchen or deſert till the arrival of fruit the following ſeaſon: hence the farmer will ſee the utility of propagating theſe kinds, and multiplying them in his plan far beyond the others.

I now proceed in the next book to conſider fruit more particularly, and to give a deſcription of ſome of the beſt kinds, from which the farmer may ſelect what is agreeable to him, and fitteſt for the purpoſes of his plans. In forming and planting of orchards, every farmer's judgment muſt be his guide. I have already taken notice, that an amphitheatre of fruit-trees may

make a charming part of an extenſive pleaſure garden. The terminations of viſto's, where the diſtance is not very great, can hardly fall on a more delightful object than a plantation of fruit-trees. A bowling-green may be decently adorned, by being ſurrounded with a row of half-ſtandards, dwarfs, or even an eſpalier.

THE FRUIT-GARDENER.

BOOK THE THIRD.

IT now remains to give a particular deſcription of ſuch fruit, of each kind, as have appeared to us to be the beſt, after a careful examination; and to take notice in a ſpecial manner of the kinds of trees that are known to ſucceed in Scotland, and bear in each of the ſhapes that have been deſcribed. To enquire after their fitneſs for theſe ſeveral purpoſes, ſhall be the ſubject of the preſent book, as this ſeems neceſſary to render the work compleat.

CHAP.

CHAP. I. Of Grapes.

SO excellent is the fruit of the vine, that grapes would justly deserve the preference to every other kind of fruit, even in North Britain, could we but find vines hardy enough to bear the great and sudden changes of weather that happen in our climate; fertile in such a manner as to form their fruit; nourish them till they arrive at the proper size; and ripen them even in the most unfavourable seasons. But this is so far from being the case, that few vines can be found that are able to bear the cold of our winters, or to endure the inclemency of our springs, even on the best aspected walls, and in what are seemingly the most favourable situations. However, as the curious may incline to make trial of a few vines in their plans for the sake of variety, I shall endeavour to offer a few directions, which may prove of use to guide them in making a proper choice.

SECT. I. We have observed, that they only succeed on walls in Scotland; and even

even on theſe, it is but a few kinds that you can reckon on the ripening of the fruit, unleſs they are aſſiſted by artificial heat, or ſheltered in the ſpring from the deſtructive cold. Such gentlemen as incline to lay out the expence, may be pretty certain of obtaining grapes, by placing glaſs-frames before the vines; and behind theſe the fruit will acquire a large ſize, and look charmingly: but they will neither have the taſte or flavour of thoſe of the ſame kind, that are produced and ripened in the open air. However, it is not my preſent buſineſs to conſider the effect of glaſs-caſes or hot-houſes: theſe I ſhall reſerve till ſome future occaſion, when, if leiſure permits, they may poſſibly be fully treated of, and their effects explained on ſuch obvious principles, as will render them eaſily underſtood by every reader of common capacity.

SECT. II. We have ſometimes ſeen vines growing againſt the ends of houſes, through which chimnies paſſed, and in which conſtant fires were kept, bear plentifully, and bring their grapes to maturity in favourable ſeaſons.

SECT.

SECT. III. In ſome low, warm, ſheltered ſituations, where the ſoil is proper, it is hardly to be doubted, but that ſome early kinds of grapes may do well: but ſuch places are rarely to be met with; and it is more than probable, that vines in general never will be cultivated to advantage in Scotland. To ſuch as are curious, and incline to make trial of a few vines on ſouth-eaſt or ſouth aſpected walls, in a rich light ſoil, we would recommend the white ſweet water, as it is a good bearer, and the fruit which are early ripe, have a ſweet agreeable taſte. This vine is tolerably hardy, and the grapes will ripen in ordinary ſeaſons.

SECT. IV. The fruit of the cluſter-currant is much commended for its peculiar ſweetneſs; the vine for its plentiful bearing, and the early ripeneſs of the grapes. The bunches it produces are numerous, and the cluſters placed thick on the branches.

SECT. V. Some kinds of Muſcadines may perhaps ſucceed in the open air on a ſouth-eaſt, or ſouth aſpected wall, when unaſſiſted by artificial heat; but they only ripen

ſipen even on the beſt aſpects in good warm ſeaſons.

SECT. VI. To multiply kinds would be uſing the reader ill; for we are convinced from frequent obſervations, that in very few ſituations in Scotland, will vines ſo proſper as to bear tolerably; and thoſe who plant them in improper ſoils, or high, cold ſituations, will loſe their expence, and never taſte the fruit of their labour.

SECT. VII. If the growing of brambles was a certain proof of the fitneſs of ſoils for receiving of vines, and rendering them fruitful; as has been alledged by ſeveral authors of conſiderable reputation who have written on gardening; all Scotland might be converted into vine-yards; for hardly will you find any place in which theſe will not thrive.

SECT. VIII. After planting, in order to encourage the growth and bearing of your vines, aſhes, lime, and many other ſubſtances may be laid on the borders in autumn, after they are delved; and this may be pointed in next ſpring. By means of theſe ſubſtances, you may bring the ſoil to any degree of richneſs, and copious cluſters will reward your labour, if the

ſeaſons

ſeaſons are warm and equal, with a great and conſtant heat.

SECT. IX. Vines may be pruned, for ſome years after planting, in the ſame manner as directed for fruit-trees on walls; but after the roots have acquired ſtrength, and you have provided for a regular head by ſeveral loppings, train the branches as they are produced regularly to the wall: and in the growing ſeaſon cut off cloſe to the wood all weak ſhoots that have no flowers on them, and likewiſe all claſpers, and ſhorten ſuch branches as have cluſters on them, and ſhoot directly from the wall. This will convert the efforts of the ſap to increaſing the ſize of the fruit; and by expoſing them to the air and ſun, they will acquire a fine flavour and taſte, and the ſkin of the grapes a charming colour.

SECT. X. Watering of vines in droughty weather, is beneficial to both tree and fruit; and the oftener that the borders on which they grow are worked, ſo much the better. Peaches come next to be treated of. Many kinds of theſe are beautiful and delicious; and what pity is it that the trees are ſo delicate in many places of Scotland.

CHAP.

CHAP. II.

Of Peaches.

PEACHES were well known in Italy in the time of Pliny. He informs us, that they were not natives of Asia or Greece, but brought from Persia: that they were first planted in Egypt, and from thence transplanted to Rhodes, where they did not succeed. It is more than probable, that they were not much sought after, considering the bad reputation they were under; for the fruit were believed to be poisonous, in the time of Columella: hence the following lines:

Et pomis quæ barbara Persis
Miserat, ut fama est, patriis armata venenis.
Lib. x.

We find this accusation against them supported by no less authority than that of Galen, an eminent physician in the reign of the Emperor Marcus Antoninus. But the conceit of their being noxious has been long ago banished, and the contrary proved by the experience of many ages:

and we of the preſent time, are fully convinced that they are both a pleaſant and ſalutary nouriſhment, provided they are eaten when ripe; and when we conſider their exalted flavours and delicious taſtes, we are obliged to confeſs that there are few kinds of fruit which can be compared with them.

SECT. I. It is more than probable, that they have been but a ſhort ſpace of time planted and cultivated in Scotland; for they are unable to bear the rigours of our ſeaſons in the open air; and fruit-walls with us are perhaps of no ancient date; and even on theſe, the crop is very precarious.

SECT. II. Whatever attempts have been made by the ſeveral writers on fruit-trees, to diſtinguiſh the different kinds of peach-trees from one another, all of them have been unſucceſsful; nor is it an eaſy matter to find out a proper method. The flowers to which ſome writers have had recourſe, can be of ſmall uſe; for the colours of the flower-leaves in all of the kinds reſemble each other; that is, all of them are red at their firſt appearance, and this becomes fainter gradually as they expand,

and

and after they are opened, till they fade and fall off.

SECT. III. The leaves have with more reaſon been conſidered by ſome writers on fruit-trees, as more uſeful to diſtinguiſh the ſpecies, as ſome of them are ſomewhat more indented in the edges than others. Here the ſhape of the leaves is of no uſe, as it varies ſo little; and almoſt all the trees reſemble one another very near, in the manner of growth, the colour of the bark, &c. ſo that the fruit alone are the proper criterion of the kinds.

SECT. IV. Let us now enquire what aſſiſtance may be had from the fruit. The colour can be of little uſe; for ſuch of the fruit on any tree that are expoſed to the ſun, acquire a higher colour than thoſe that grow in the ſhade. The ſhape, tho' it varies, is of conſiderable uſe in aſcertaining the kinds: the ſubſtance, flavour, and taſte, all of which are peculiar in ſome kinds, as will evidently appear, if they are compared when in perfect maturity, will greatly aſſiſt us in forming a judgment. The pulp quiting the ſtone, or adhering to it, as it is invariable, may prove of conſiderable utility in determining the

kinds; as will likewiſe the ſize of the ſtone in ſome kinds. But notwithſtanding all the marks which might have been taken from the above, there is the greateſt confuſion in the kinds, and a multiplicity of names beſtowed on ſeveral of them without propriety or diſtinctneſs.

SECT. V. The time of ripening will ſurely diſtinguiſh the early kinds from the late; but will prove leſs uſeful in ſuch kinds whoſe maturity are ſimultaneous; but in theſe, as well as in the other kinds of fruit, ſome of the moſt excellent are beſt known.

SECT. VI. It is now proper to particularize a few of the beſt kinds, which bid as fair for thriving and bearing in Scotland, as any others. I ſhall only recommend ſuch as I have tried in a very unfavourable ſituation: at the ſame time, I muſt inform my reader, that in cold expoſed places, the trees will neither thrive nor bear. But to ſuch as ſhall chuſe to make trial of a few trees, I would give the following appearances, as certain marks of ſucceſs. In ſuch ſoils and ſituations where the firſt growth of the tree is vigorous, the ſecond growth moderate, and where no part of

of the branches are froſt-bit, or killed in ſpring, there in a few years you may ſurely reckon on reaping the fruit of your labour; for, provided that you have made a good choice of kinds, pruned and trained them properly, you may certainly depend on it that they will bear plentifully.

SECT. VII. In cold ſituations, the early kinds ſhould only be planted, for the late will never ripen. This I thought proper to mention, as in the following deſcriptions the kinds ſtand in the order of their ripening; and the two kinds that are lateſt placed, tho' truly excellent peaches, yet unleſs the ſituation where they are planted is low and warm, the ſoil proper, and the aſpect ſouth or ſouth-eaſt, and the ſeaſon favourable, in vain will you expect them to acquire the proper degree of ripeneſs.

N°. 1. The firſt I ſhall make mention of is the red nutmeg: the fruit are melting, juicy, and the taſte agreeable. The tree is hardy, and a good bearer, tho' the wood is weak.

N°. 2. Anne peach. The tree is a vigorous grower, and makes a beautiful figure, when properly pruned, and regularly trained

to the wall; but like other vigorous growing trees, is long before it come to its bearing ſtate, unleſs aided by judicious pruning: its fruit are beautiful and delicious.

N°. 3. The Minion is a large red peach; its ſkin is like ſattin; its fleſh is fine and melting, with a briſk ſweet juice: the ſhape is longiſh, with a furrow in the middle, and generally one ſide larger than the other; the ſtone is ſmall. The tree grows with vigour. I have found it ſubject to be killed by ſevere froſt happening late in ſpring or in ſummer. This is probably what Mr. Switzer had obſerved; for he aſſerts, that it is very ſubject to blight.

N°. 4. The Montauban peach is very large, red when expoſed to the ſun, but pale towards the wall: its pulp is free, and its juice delicious. The tree is hardy, grows regularly, ſo is eaſily trained to the wall, on which it looks handſome, and bears plentifully.

N°. 5. The Nobleſs peach exceeds the Montauban peach in ſize; the pulp quits the ſtone, is melting, and the taſte excellent. The tree produces its branches in a very regular manner, is hardy and durable, and generally a good bearer.

N°. 6.

N°. 6. The old Newington is a Britiſh peach originally; it is large and beautiful, the pulp is firm, and ſticks to the ſtone; its juice is briſk, and well reliſhed: the tree is hardy, and bears well.

N°. 7. The Admirable is the laſt peach I ſhall deſcribe: it is large and round, of a fine red colour; the pulp is firm and melting, its juice briſk and ſweet, its ſtone is ſmall; it comes to perfection when happily ſituated, even in bad ſeaſons. The tree is beautiful and hardy, and bears a great deal of fruit.

I might here give a catalogue of many other peaches, good fruit, and that would ſucceed in Scotland equally well with thoſe I have made mention of; and as this may be required by ſuch as intend to make extenſive plantations on walls, I recommend my reader to Mr. Switzer, who ſeems to have well underſtood the fruit that are fit for the ſoil and clime of England; and from him every reader of tolerable knowledge will be able to ſelect a proper choice for his plans. So I proceed to nectarines.

CHAP. III.

Of Nectarines.

THE curious, who generally are pleaſed with variety, will be ſatisfied to find ſome account of nectarines. I ſhall only take notice of a few, for the reaſons already given. Theſe trees are ſaid, by ſome Engliſh writers on this ſubject, to be hardier than peach-trees. Experience convinces me, that it is otherways in Scotland; and the ſame objections that I have made to planting late peaches in Scotland, holds good againſt nectarines, which would not be the caſe, did nectarines ripen as marked in Mr. Miller's Dictionary: but the reader will find a very great difference in the time of ripening in Scotland, not only of theſe, but of every other kind of fruit, from what is marked by this author. He will alſo find, on obſerving attentively, that he has inverted the order of ſeveral of the times when they come to a ſtate of maturity. Whether this may have been owing to his making obſervations in different places, where the ſoil and ſituations varied,

I ſhall not pretend to determine; or perhaps to his having taken the accounts from thoſe who did not obſerve attentively: but ſcarcely can we believe, that ſix weeks of difference ſhould intervene betwixt the ripening of the ſame fruit; and yet as great difference as this may be obſerved in the catalogues of Switzer and Miller. Compare, for inſtance, Elrouge nectarines.

But we hope ſoon to be able to give an exact account of the preciſe times of ripening on ſeveral aſpects, of all the kinds of nectarines that ſhall be deſcribed in this treatiſe. After this deviation, I go on with my account of nectarines.

SECT. I. They are chiefly diſtinguiſhed from peaches, by being ſmoother on the ſkin, and having a firmer ſubſtance. The deliciouſneſs of their juices is alledged by ſome to have procured them their name; reſembling in taſte, ſay they, the drink of the Gods, which was called nectar. Be that as it will, certain it is, that good kinds of nectarines, when their ſize and maturity has acquired that degree of perfection which is proper to their kinds, ſcarcely can we imagine any thing more delicious than their taſte and flavour: a

vinous briſkneſs greatly exalting their reliſh, affords us an uncommon pleaſure. But in vain ſhall we regret, that in Scotland they ſeldom acquire any degree of perfection; and at beſt, they can only be regarded in moſt ſituations as a very precarious fruit. Two of theſe, in the following liſt, are natives of Britain; and perhaps there is ſome reaſon for ſuppoſing them hardier than foreigners.

N°. 1. Elrouge nectarine is in ſhape longiſh, of a middling ſize, has a melting pulp, and vinous juice.

N°. 2. Red Roman nectarine is a large fruit, of a red colour all round; its ſubſtance is firm, of a yellow colour, and the taſte very agreeable.

N°. 3. Newington nectarine is large, of a red colour, and the pulp is good. The tree is hardy, and a good bearer.

CHAP.

CHAP IV.

Of Apricots.

THE apricot-tree, tho' a native of Armenia, is hardy enough to thrive and bear in leſs favourable climes than the one where it was found to be indigenous. The conquering Romans, after ſubduing Armenia, were probably the firſt who introduced theſe kind of fruit-trees into Europe; and whether we conſider the apricot's beauty or goodneſs, we ſhall regard it as a conſiderable acquiſition. In the opinion of Mr. Quintinye, who was an excellent judge of fruit, it is unable to bear a compariſon with the preceding kinds of fruit that have been deſcribed; and yet the good kinds are juſtly valued by ſeveral people of taſte in Britain.

SECT. I. Such of the trees, of whatever kinds they be, if they are hardy, make a fine appearance when regularly trained againſt a wall; nor are the fruit without their merit, in good warm ſeaſons, when they are perfectly ripe: for they are ſweet and agreeable; nor is the acid they contain

tain unpleaſant, unleſs in bad ſeaſons, when it ſuperabounds.

SECT. II. Mr. Miller tells us in his Dictionary, that he planted them in the open air, and that the fruit is greatly mended by growing on a ſtandard: and this ſeems to have been practiſed in England before his time, as we ſee in Switzer. I have made the experiment in Scotland, and am thereby enabled to adviſe others to ſave their labour and money: neither is it likely that they will ſucceed in the open air in Scotland, unleſs in ſome uncommonly warm and well ſheltered places.

SECT. III. Many of the kinds are but indifferent bearers; and in ſome trees, tho' the fruit form and advance in growth till they are pretty large, yet they drop off before maturity. Theſe need not be loſt; they may be preſerved with ſugar; and in that ſtate, are equal to moſt of the preſerved fruit that are imported from the Weſt Indies.

SECT. IV. The trees of moſt of the kinds of apricots, when they are improperly pruned, are on the decline before they arrive at their bearing ſtate; for the trees in general grow very vigorouſly, and conſe-

conſequently require much room on the wall; and in unſkilful hands, when they are injudiciouſly pruned, they never fail to go wrong.

SECT. V. The leaves of apricot-trees are greedily devoured by ſeveral inſects, but moſtly by ſuch as produce night-butterflies. Many of the clock kind, or ſcarabei, (beetles in Engliſh) are likewiſe fond of them, and often do them much harm.

SECT. VI. I have ſeen the trees entirely killed by cold in the end of ſpring and the beginning of ſummer, in the ſame manner as peaches.—After all, in ſome favourable ſoils and ſituations, even in Scotland, I know that the trees are both hardy and fruitful.

SECT. VII. I ſhall only deſcribe two kinds, which I think deſerve the preference on account of their readily ſucceeding. The firſt deſerves its place from its ripening its fruit ſo early; the other from the real goodneſs of the fruit.

SECT. VIII. The kinds that are deſcribed below, may be planted on two or three different aſpects, in order to ſecure fruit: for where they are expoſed when in flower to ſevere weather, the flowers fall off without

out forming any fruit, while thoſe on the aſpects that are ſheltered from the inclemency of the weather, form their fruit, and have thereby a chance of bringing them to perfection, if the ſeaſon is tolerable.

N°. 1. The early apricot is ſmall, and its juice ſweet. This tree is known by the ſmallneſs of its wood and leaves.

N°. 2. The Bruxelles is large; its juice briſk and agreeable. The trees are commonly hardy, and for the moſt part good bearers when old.

Beſides the above deſcribed kinds of apricots, the large Dutch, Orange, Turkey, and Roman, may prove acceptable to ſuch as are fond of apricots, and delight in variety of fruits.

CHAP.

CHAP. V.

Of Plums.

IT is now proper to deſcribe a kind of fruit, which tho' an exotic, yet thrives as well in Scotland as if it were indigenous. Many kinds of plums ſucceed in ſeveral places of this country in the open air, and bear well: and the beſt kinds of them, even tho' ſome of them are too delicate to bear the open air, ſucceed excellently on walls; and the fruit they produce are truly delicious to the taſte, and beautiful to the ſight. In ſupport of the firſt aſſertion, I appeal to the taſte of a green-gauge-plum when it is perfectly ripe; in which will then be found a delicious ſweetneſs, far exceeding every other ſweet ſubſtance, whether natural or artificial. Can any thing exceed in beauty the charming powder with which nature has painted ſeveral of their ſurfaces with a ſurpriſing variety of delightful colours? The beſt artiſts, in imitation of theſe, have only produced mere daubings, when compared with the

the original themſelves. With how much pleaſure do we admire the fine colouring of fruits by Snaars in Antwerp, by many Italian and French painters? But ſtill the moſt finiſhed pieces, when nearly examined, only ſerve to convince us, that tho' the beauties of the productions of nature may be imitated, yet they never can be equalled by the ableſt painters.

SECT. I. It is propoſed in this chapter, to deſcribe a few of the beſt kinds of plums, and to add ſome account of the moſt intereſting particulars with regard to the trees, the manner of their growing and bearing in Scotland. It ſeems here proper to caution the planter againſt increaſing the number of trees too much; for when the fruit are ripe, they ſoon wallow, and loſe their taſte; nor will they bear carrying to any conſiderable diſtance without being bruiſed, by which both their look and taſte are ſpoiled.

SECT. II. Near great towns, where there is a demand and ready ſale for theſe fruit, the planting of plum-trees may turn out to good account: but in the open air, they are more precarious than pears and apples;

apples; and the fruit, when ripe, are gathered with much more trouble and greater expence.

SECT. III. As they expand their flowers early in ſpring, the ſeverity of the ſeaſon frequently deſtroys the fruit while in the flower. To prevent this happening generally, it will be proper to plant ſome of the beſt kinds on every aſpect, whereby you will ſave them that are planted on ſuch aſpects as are ſkreened from the weather.

SECT. IV. When plum-trees are planted in the open air, in cold ſituations, the flowers are often deſtroyed by the ſeverity of the cold: in ſuch places, there is no hope of having fruit, but from the hardieſt trees and beſt bearers.

SECT. V. In well ſheltered and warm ſituations, when the ſeaſons are kindly, they often bear great quantities of fruit; and in ſuch places, the beſt and moſt delicate kinds may be tried in the open air, as dwarfs, eſpaliers, or half-ſtandards; nay, even as ſtandards.

SECT. VI. Any planter who is a tolerable judge of fruit, may make ſuch a collection as will afford him plums from the

end

end of July to the middle of October; and within this ſpace of time, has Nature confined her gifts in this excellent kind of fruit.

N°. 1. The firſt ripe plum is called by ſome writers on fruit-trees the Jean Hative; by others, the white primordian: its longiſh ſhape reſembles ſome pears. It is of a yellowiſh colour, covered with a white powder when ripe: its pulp is tender, and the taſte not unpleaſant, by a ſmall perfume added to an acid and ſweet happily blended together: it quits the ſtone. The tree is a tolerable good bearer, but is apt to grow too thick of branches, when it is not carefully pruned. This fruit ripened on a ſouth-eaſt aſpect about the beginning of Auguſt 1761, as alſo 1762, and in the middle of Auguſt 1764.

N°. 2. Queen Claude plum is ſmall and round, flattened a little at each end; the ſkin is pearl-coloured, with red ſpots: its fleſh is firm, comes clear from the ſtone, and the taſte of its melting pulp is ſweet and delicious. The tree grows regularly, and bears well. The fruit were ripe on a ſouth-weſt aſpect the beginning of September 1761.

N°. 3.

N°. 3. Mirabel is a round ſmall beautiful plum, of a whitiſh yellow colour; the ſubſtance is firm, and quits the ſtone: the pulp is ſweet and delicious. The tree makes a handſome figure on the wall, by its regular and numerous bearing branches. The fruit were ripe on a ſouth-eaſt aſpect the beginning of September 1761. It is generally a good bearer.

N°. 4. Blue perdrigon plum is large and long, of a blue colour, and finely powdered: its pulp is firm, parts from the ſtone, and the taſte is very delicious. The tree grows regularly, and is very beautiful, but a bad bearer.

N°. 5. Royal plum is round, and rather larger than the perdrigon, of a charming red colour, little powdered, and very beautiful: its taſte is exquiſitely fine.

The tree produces its branches thin and irregular, and is a bad bearer.

N°. 6. Maitre Claude is large, round, and whitiſh. Its pulp, which is firm, parts from the ſtone, and its juice is briſk and ſweet. The tree grows vigorouſly, and bears well.

N°. 7. Green-gauge-plum. The name denotes its colour, tho' it turns a little yel-

lowiſh when ripe: it is large, round, and ſomewhat furrowed in the middle. Its pulp is tender and juicy, and its taſte ſo exquiſitely ſweet and delicious, that nothing can exceed it. The tree grows regularly, is hardy, and bears plentifully. It may be planted in every manner formerly mentioned, and ſeldom fails to ſucceed. The fruit were ripe the middle of September 1761, on a ſouth-eaſt aſpect.

N°. 8. Roch-courbon, or red diaper-plum, is nearly round, of a beautiful red colour, with a bluiſh powder over it: the fleſh is free, delicate, and ſweet. The tree makes long regular ſhoots, and is a good bearer. Its fruit were ripe, on a ſouth-eaſt wall, the middle of September 1761.

N°. 9. Apricot-plum is large, round, and white: its fleſh is firm, ſweet, and agreeable. The tree grows vigorouſly, and after it is ſome years planted on a wall, bears pretty well.

N°. 10. Brugnolle is a large, longiſh plum, furrowed in the middle, of a dark violet colour. Its ſubſtance is tender, juicy, and ſweet, and comes off from the ſtone. The tree grows vigorouſly, and, if properly managed, is a good bearer. It ripened

pened on a weſt by north aſpect the beginning of September 1761; the middle of Auguſt 1762.

N°. 11. Fotheringham is a large, long, red, and beautiful plum: its fleſh is firm, and the taſte delicious. The tree thrives well, and is no bad bearer.

N°. 12. Orleans is a large, round, green and red plum: its fleſh, which is firm, parts from the ſtone, and is not unpleaſant, tho' it has a good deal of the acid. The tree is the moſt vigorous grower of any plum-tree that I know. It is a pity but that this tree were more hardy; for it is the beſt bearer of any we have, both on a wall and in the open air. A froſt in the month of June 1759, killed ſeveral trees on the wall, as well as in the open air. Its too great growth ſeems to diſpoſe it for ſuffering by cold, for I have known it ſhoot five or ſix feet in one year.

N°. 13. Magnum Bonum, or white imperial, is a very large, beautiful, oblong plum; yellow when ripe. Its pulp is ſoft, ſweetiſh, and agreeable; it is excellent for preſerving. The tree produces only a few vigorous branches, with

ſome ſmall ones, yet it is a conſtant and great bearer.

N°. 14. Red Magnum Bonum, or imperial-plum, is very large, of a pear-ſhape, and dark red colour when ripe: its pulp is ſoft, not very juicy, and tolerably good. The tree produces numerous branches, full of ſpurs, and is a very great bearer.

N°. 15. Saint Catharine is of a pear-ſhape, yellow when ripe; and if permitted to hang on the tree till it becomes wrinkled near the ſtalk, and ſoft, its juice is rich and ſweet. This plum will keep a few days after it is taken from the tree.

The tree grows regularly, is beautiful, and bears well.

N°. 16. Imperatrice is ſhaped like the violet-perdrigon, of the ſame colour, but adheres cloſe to the ſtone. Its fleſh is firm, and of an excellent taſte. The tree is hardy, and no bad bearer.

SECT. VII. Beſides the above deſcribed, there are many kinds of plum-trees common in Scotland, which may be obtained by ſuckers, and thrive and bear well without any trouble, except that of planting.

planting. Such are the white-corn, ſummer-ſcarlet, damaſcenes, julians, burnets, horſe-jaggs, winter-ſcarlet, &c. and theſe kinds thrive well in hedge-rows in many places, and bear plentifully; neither are the fruit of many of them to be deſpiſed.

SECT. VIII. I now quit this ſubject, in order that I may come to another ſtone-fruit, ſome kinds of which are perfectly naturalized to Scotland. The trees thrive well, look handſome, and bear well; witneſs the Kentiſh, morello, mayduke, and heart cherries. Theſe in many places defy the ſeverity of our ſeaſons: other kinds are more delicate, and have but ſmall chance for ſucceeding.

CHAP. VI.

Of Cherries.

THIS pleaſant fruit made its firſt appearance in Italy, about fourſcore years before the commencement of the Chriſtian Æra. Lucullus, a Roman general, who, amidſt the horrors of war, ſtudied the elegance of living, brought ſeveral of the trees from Pontus, after he had overcome Mithridates. From Italy, in one hundred and twenty years, they were carried over to Britain, and propagated in that country, according to Pliny. See his works publiſhed by Harduin, vol. i. book xv. chapter xxv. page 751. But how ſhall we be able to reconcile to this the account that is given by Anderſon on Commerce, who ſays, that they were firſt planted in England, in the year of Chriſt 1540. But leaving this author to anſwer for the aſſertion, I proceed to obſerve, that in the time of Pliny, the Romans ſeem to have poſſeſſed ſeveral kinds of this fruit. He firſt makes mention of the Aproniana, and he adds *maximè rubent*. Harduin calls it

it Cerifier à trochet; in Engliſh, cluſter-cherry. The ſecond kind that is made mention of by Pliny, is the Lutatia niger-rima; probably the mazzard-cherry. The third, according to him, is the Ceciliana et rotunda; Kentiſh-cherry. The fourth kind is Juniana; in French, guignes; in Engliſh, geens. His fifth kind is Duracina; in French, bigarots; in Engliſh, heart-cherries. He has made mention of ſeveral others, probably different from the above; but in ſuch an indiſtinct manner, that it is not eaſy for us to determine whether or not we at preſent poſſeſs the kinds.

SECT. I. After the above digreſſion, I return to obſerve, that cherries are both a pleaſant and healthſome fruit; and ſcarcely can we imagine any thing more agreeable, during the ſummer months, than their delicious and refreſhing juices; and if the planter makes a proper choice of kinds, and places them judiciouſly, he may enjoy in fine ſeaſons the fruit of one or other of the kinds that I am about to deſcribe, from the end of May till the month of Auguſt.

SECT. II. The following inconveni-

ences attend them, when planted in the open air.

In the firſt place, they no ſooner begin to colour, or ſhow the marks of approaching ripeneſs, than they are preyed on by ſmall birds, &c.

Secondly, That there is much labour required in gathering the fruit; and the trees are often thereby ſo much hurt, as to have their figure ſpoiled; nay, ſometimes their lives endangered.

Thirdly, That the fruit, when gathered, bring but a ſmall price.

Fourthly, That as their bearing fruit in the open air, depends on good weather happening when they are in flower, ſo the early kinds of cherries are often deſtroyed by the ſevere colds of our ſprings in Scotland. Let me add in general, that they keep but for a very ſhort while after they are taken from the trees when ripe, and are eaſily damaged by carrying. Proper nets being ſpread over the trees, certainly prevents their being preyed on by birds; but the expence and trouble of theſe are great.

I ſhall now, according to the method I have hitherto followed, deſcribe ſome of the

the beſt kinds of cherries, and only ſuch as I have tried and found to ſucceed or not; but moſtly the former.

N°. 1. May-cherry would not deſerve to be named, were it not the firſt of the ſeaſon in making its appearance. The wood of the tree is ſmall, and it requires the beſt ſoil and warmeſt ſituation, as well as a very favourable aſpect, to bring it to any thing.

N°. 2. May-dukes are fine large cherries, nearly of the ſhape of a heart-cherry, of a dark red, or rather black colour when perfectly ripe: they are juicy, ſweet, and delicious. The tree has large leaves and ſtrong wood, grows regularly on a wall, and is a conſtant and great bearer on a ſouth or ſouth-eaſt aſpect, or even a worſe aſpect. Some of the trees ſhould be planted on every aſpect, in order to enjoy theſe fruit as long as poſſible; tho' thoſe that are firſt ripe in the ſeaſon, are generally the moſt delicious. This kind neither thrives nor bears well in the open air, unleſs in warm ſituations.

Covering the trees on a wall with nets, preſerves the fruit from birds, but retards their ripening.

Mr.

Mr. Switzer aſſerts, that may-dukes are of two kinds, from the time of their ripening: one kind he ſays is in perfection in May and June, and the other in July and Auguſt. He was poſſibly deceived by the effect of particular ſeaſons, which I have obſerved to occaſion full three weeks of difference in the ripening of the ſame kind: and aſpects have ſtill a greater effect. Beſides the above, the following may be had of nurſerymen, common duke, Holman's duke, and ſeveral others, which are only varieties of the above.

N°. 3. Heart-cherries are ſo called from a ſuppoſed reſemblance to the figure of a heart: they are of different colours, white, red, and black. The fruit are large, and as it were ſquared: their pulp is firm, tho' melting and juicy: the taſte is remarkably ſweet, and very pleaſant. The trees produce large, long, irregular wood-branches, and the leaves are long and narrow. They are almoſt all of them but indifferent bearers, nor do they conſtantly bear well even on walls. The Orleans, Lukeward, and Gaſcoigne, are no other than the above hearts under the different names impoſed by the French.

N°. 4. The bleeding-heart is known by a

drop, or tear which hangs at its end. The tree grows vigorouſly on a wall, but is a bad bearer.

N°. 5. Carnation-cherry is a delicate and beautiful fruit. The tree grows very vigorouſly on a wall, but is no extraordinary bearer. It ſeems to be too tender for the climate of Scotland; for tho' the fruit acquire a conſiderable ſize ſoon after they are formed, yet they ſeldom come to perfection, or acquire a proper degree of maturity.

N°. 6. Cluſter-cherries, the fruit which grows in bunches, as the name denotes, are but indifferent. The tree grows regularly, makes a fine half-ſtandard, but is a bad bearer.

N°. 7. Kentiſh-cherries are large, round, and red, when ripe. They have much juice, which is very agreeable, having a pleaſant ſweetneſs joined to a little ſourneſs. The wood of the tree is weak, its branches numerous and regular. It makes a beautiful ſtandard, or half-ſtandard; and as its flowers are late in ſpring of appearing and opening, the fruit generally holds well. This is probably the reaſon of its being ſo generally planted preferable to the other kinds.

N°. 8. Morello's. The beſt kinds are very large,

large, of a black colour when ripe: the pulp is ſour, and they are agreeable to few perſons, unleſs eaten with ſugar, or preſerved. The trees grow regularly, are beautiful, and bear great quantities when planted on a north wall, or any other aſpect. When the trees are planted as half-ſtandards, they grow thick of bearing branches, make a good figure, and bloſſom univerſally, tho' they bear but indifferently. The fruit, produced in the open air are ſmall, and look poorly; but in their taſte are far ſuperior in goodneſs to the fruit that have grown on a wall.

Many other kinds of cherry-trees have I purchaſed from nurſerymen, and planted, but with ſo little ſucceſs, that I cannot in conſcience recommend them to others: moſt of them dwindle and die in the open air, and few of them deſerve a wall. At the ſame time, I am perſuaded that moſt of the kinds will thrive and bear in low warm ſituations and favourable ſoils. It is now proper to treat of geens, a ſtone-fruit that is liked by ſome people for the taſte of its pulp.

CHAP.

CHAP. VII.

Of Geens.

OF this fruit we have three kinds in Scotland, diſtinguiſhed by the colour of their fruit, which are either black, red, or white. The geens have but little pulp, yet the fruit are ſought after by ſeveral perſons, who reckon their juice very delicious.

SECT. I. The trees of all the three kinds become very tall and ſpreading, tho' the ſhape they generally aſſume is conical, and the branches are ſparſe. They are very fit for ſkreening the fruit-garden or orchard, when they are planted at a proper diſtance; but they ought to be excluded from both, as they over-top, and by ſhadowing hurt every kind of tree that grows near them. When theſe trees are planted in avenues in the ſpring, they make a charming appearance with their white flowers. The natural ſhape of the tree is regular, and for the greater part nearly conical; and the fruit that are intermixed with the foliage, form a pleaſing variety

variety in the end of ſummer, when they are ripe, and the crop plenteous.

All the kinds are propagated from ſuckers, which the trees ſend off in plenty. Budding diminiſhes their growth, and probably aſſiſts their bearing; for they are naturally no great bearers. The wood is uſeful, and of ſome value when the trees are cut down.

Having now finiſhed all that we intended on ſtone-fruit, we come to pippins, and ſhall begin with a fruit which offers us many and various kinds, a profuſion of ſweets, heightened by an endleſs variety of delicious flavours. The next chapter treats of pears.

CHAP.

CHAP. VIII.

Of Pears.

THIS kind of fruit has been long known, and highly eſteemed in Europe.

It is not very intereſting to my reader to know from whence it had its name, or in what country it was firſt found.

SECT. I. According to Homer, the firſt of epic poets, it made a conſpicuous figure in the garden of Alcinous. See Odyſſ. lib. vii. And not to make mention of ſeveral other Greek poets and authors who have taken notice of this fruit, it is evident, that the fruit of the pear-tree was well known to the Romans, in the moſt flouriſhing times of their empire. Virgil makes mention of three kinds, probably the moſt eſteemed in his time.

Nec ſurculus idem
Cruſtumiis, Syriiſque pyris, grævibuſque volemis.
Georg. ii. l. 88.

Cato

Cato and Columella have given us a larger liſt; and Pliny, who collected every thing on the ſubject, and added beſides what kinds he himſelf was acquainted with, has left us a catalogue of ſeveral kinds. A few of them are here exhibited to the reader; not from a belief that the kinds can be aſcertained to be any of thoſe which we poſſeſs, but in order to ſhow the opinion of Harduin, who is the beſt commentator on the works of Pliny; and that the curious and learned may have it in their power, at their leiſure hours, to compare Pliny's account with modern deſcriptions, and to make trial if they can determine what the kinds to be found in his works are, and if they can poſſibly point them out among the kinds of pears that we at preſent poſſeſs.

SECT. II. The Latin, French, and Engliſh names are added; ſo that the reader may have recourſe to Pliny, Quintinye and Switzer, or Miller.

FRENCH.

LATIN.	FRENCH.	ENGLISH.
Parva ocyſſima	Petite Muſcate	Little Muſk-pear
Falerna	Poire Sucre	Sugar-pear
Pomponiana	Bonchretien	Good Chriſtian
Favoniana	Muſcadelle	Muſcat
Myrapia	Poire de Perfume	Perfumed pear
Hordeacea	Saint Jean	Saint John
Seſſilia	Bergamotte	Bergamot
Poſt Autumnalia Serotina.	Poires d'hiver.	Winter late Pears.

But to leave purſuing of the above ſubject, which is rather a matter of curioſity than uſeful to the planter, and return to my ſubject, will perhaps prove more agreeable to the generality of my readers.

SECT. III. Here we may properly obſerve, that pear-trees juſtly deſerve the planter's care, on account of the goodneſs of their fruit, many kinds of them being excellent: then their long continuance; for if the planters make a proper choice of the kinds of trees, they may enjoy pears from Auguſt to February: and laſtly, the certainty of the trees ſucceeding, both as to growth and bearing, in many different ſoils and ſituations in Scotland.

SECT. IV. Pears, tho' they ripen in a regular ſucceſſion, from the beginning of

the month of Auguſt to the end of February, yet may with propriety be divided into ſummer, autumn, and winter-pears.

SECT. V. The firſt claſs, or thoſe of ſummer, may include ſuch pears as ordinarily ripen from the beginning of Auguſt to the middle of September; tho' in very favourable ſeaſons, ſuch as was the year 1762, their maturity precedes the month of Auguſt, and they are over before the month of September. But this was a rare inſtance; for we ſeldom have in Scotland any pears earlier than Auguſt.

The firſt ripe pears of this claſs, continue but for a very ſhort while in perfection; ſo that they ought to be often examined while they are hanging on the trees: for if they paſs the proper degree of maturity but a day or two, they ſoon turn mealy, or rot in the heart, and are then good for nothing.

SECT. VI. Gradually as the ſeaſon advances, the pears that it produces continue longer and longer in a ſtate of ripeneſs, till the approach of the autumnal pears in the time above ſpecified: nor ſhould this obſervation be confined to the ſummer pears, but

but extended to thoſe of the two other claſſes; for it is a certain truth, that the duration of their ripeneſs is in a direct ratio of the advancement of the ſeaſons; or, in plain Engliſh, pears continue longer in a ſtate of perfect maturity, the later they are of making their appearance.

SECT. VII. To find out the proper degree of ripeneſs, and its duration in each of the ſeveral kinds, is well worth the planter's ſtudy; for if a proper method is not followed in aſcertaining this in particular places, a good kind of fruit may often be rejected by the owner's unſkilfulneſs in making of his trials at improper times; for neither unripe fruit, nor ſuch as have paſſed their prime, can ever prove agreeable to thoſe who are good judges of fruit.

SECT. VIII. Autumnal pears may include all the fruit of this kind, that ordinarily ripen from the middle of September to the beginning of November. The pears of this claſs, in the ſame manner as thoſe of the preceding, continue longer in a ſtate of maturity, according to the lateneſs of their appearance. The pears of both the preceding claſſes ſhould be permitted

mitted to hang on the trees till they are ripe.

The whole of this claſs will continue fit for uſe, or keep for ſeveral days after they are taken from the trees. The lateſt kinds of them may be preſerved for ſome weeks; but tho' they continue for a conſiderable time without corrupting, yet the delicious taſte and agreeable flavour ſo obſervable in many of the kinds, is much diminiſhed before they begin to ſpoil; ſo that their ſtate of perfection may be conſidered as of ſhorter duration than the ſound appearance of the fruit.

SECT. IX. The laſt claſs, or thoſe of winter, will include all that ripen after the beginning of November. Theſe ſhould hang on the tree as long as the weather will allow them, or till the froſt ſet in. They keep very well, and are believed to require a particular management, in order to bring them to maturity after they are taken from the trees, of which I ſhall treat afterwards.

SECT. X. Winter-pears are apteſt to ſuffer in Scotland from cold late ſeaſons, or early froſts, eſpecially in the open air; for

for ſuch as are planted on walls run no great riſk.

SECT. XI. It is almoſt impoſſible to convey in words an idea of a particular kind of pear to ſuch as are unacquainted; for pears are not to be known by a deſcription taken from the ſhape, ſize, or colour of any ſingle kind, as all of theſe vary greatly, even in the fruit of a particular tree. The reader may ſatisfy himſelf as to the truth of this, by comparing the fruit on almoſt any kind of tree.

SECT. XII. The pulp, or fleſh, with the taſte, is as little proper to aſcertain the kinds, as many of them ſo nearly reſemble one another in their ſubſtance and taſtes; beſides, ſuch is the poverty of languages, that there are not words to expreſs half that variety of taſtes which is found in pears.

SECT. XIII. Let us now appeal to nature, and examine a kind of pear univerſally known. Take the bergamots produced by the ſame tree. Every body knows that the ſhape of the fruit in general is round, and flat at each end, with a ſhort ſtalk inſerted: compare them together, ſome will be found long, others taper, with

a fleſhy protruſion at the ſtalk. They are of all ſizes, from large to little, and their colours very various; and yet perhaps there is no kinds of pears that reſemble one another nearer in ſhape, &c. than bergamots.

What variety in ſhape, ſize, and colour, do we find in the Ambrets, Saint Germains, Achans, winter-thorns, &c.!

Yet, after all, the attentive obſerver will on repeated trials acquire ſuch experience, as to find little difficulty in knowing any kind of fruit, when they are preſented thoroughly ripened.

SECT. XIV. It is now propoſed to deſcribe a few of the beſt kinds of pears from one of the fruit of each kind, which may be looked on as the proper ſhape of that fruit in general. Mention will alſo be made of ſome particulars, as to the manner of growth, figure, durableneſs, and bearing of the tree; of its fitneſs for the ſeveral purpoſes of the planter, whether he chuſes to diſpoſe of it in the fruit-garden or orchard. Moſt of the deſcriptions are taken from pears that were produced by trees grafted on free-ſtocks, and the characters of the trees are given from the ſame.

SECT. XV. The names given by Quintinye and Tournefort are added. Theſe gentlemen ſeem to me to have ſtudied and underſtood fruit better than any other authors; and the preſerving of their names may contribute to prevent confuſion in the kinds. A gardener no ſooner gets into his poſſeſſion an unknown fruit, than he gives it a name of his own, under which he diſtributes it: this, tho' an old kind, is concealed by its new name, and ſo deceives the ignorant planters. I ſhall deſcribe ſeveral by the names that they are generally found under in Scotland; and the deſcriptions are taken directly from the ripe fruit. In the following deſcriptions, the kinds are placed nearly in the order of their ripening, and they are numbered according to the claſſes.

CLASS I.

Of Summer Pears.

N°. 1. PEAR-JAMES. This is here placed, becauſe it is the earlieſt pear of any kind that we have in Scotland. It is ſmall, red where expoſed to the ſun, and yellow on the oppoſite ſide, when ripe. It is but an indifferent pear, when we conſider its taſte; and it ſoon turns mealy, or rots, after it is ripe. The wood of the tree is ſmall, tho' the tree becomes very large and beautiful. It is a great bearer, makes but an indifferent dwarf, or half-ſtandard, and it by no means deſerves a wall.

N°. 2. Pear Crawford is either ſimultaneous with the above, or appears immediately after it: it is of the true pear-ſhape, larger than the former, of a white colour: its fleſh is tender and juicy, and its taſte is agreeable. This ſeems to be the ſummer blanquette of moſt of the French and Engliſh writers on gardening, and is frequently to be met with in Scotland.

The

The tree is hardy, grows vigorouſly, and not only makes a fine appearance in every ſhape in the open air, but alſo bears plentifully on a wall.

N°. 3. Ladies-Lemon: its body is round, flattened towards the eye, and ſomewhat protruded towards the ſtalk, which is inſerted. The colour of this pear is red where it was expoſed to the ſun, and yellow on the oppoſite ſide. The fleſh is tender, and the juice ſweet, with a little perfume: it was ripe the middle of Auguſt 1762. The tree grows regularly, and is a good bearer.

N°. 4. Green-pear of Pinkie is ſmall, nearly round, tho' flat towards the foot-ſtalk, which is ſhort and ſtraight: the colour is green, mixed with yellow. The fleſh is ſoft and melting, and its juice has an agreeable ſweetneſs: it is generally ripe the middle or end of Auguſt. The tree grows tolerably large, and bears well.

N°. 5. Pear Piper is ſmall, oblong, tho' larger at the head, and protruded towards the foot-ſtalk, which is long and inſerted. The colour of this fruit is green and yellow; its ſubſtance is tender, and its juice a delicious mixture of acid and ſweet, that

is

is very pleaſant. It ripened the middle of Auguſt 1762. The tree grows well, and bears plentifully.

N°. 6. Wine pear is ſhort, thick, and headed, flattened towards the eye, which is furrowed. Its colour is red, yellow, and green; its fleſh tender, and its juice not unpleaſant. It ripened the middle of Auguſt 1762.

The tree produces numerous branches, which are thick placed; it is a great bearer.

N°. 7. At the ſame time that I examined the above deſcribed pears, I received a round, red, and yellow pear, of a moderate ſize, with a ſhort foot-ſtalk: its fleſh was tender, acid, and ſweet, and its taſte not unpleaſant. It was ripe the middle of Auguſt, and ſeemed to agree with the prince's-pear of Mr. Miller, &c.

The tree grows well, and bears copiouſly.

N°. 8. Little Muſcat. *Pyrus ſativa, fructu eſtivo, parvo, flaveſcente, moſchato*, TOURNEF. *Inſt. Rei Herb. Petite Muſcate*, QUINTINYE.

This pear is ſmall, nearly round, of a yellow colour when ripe. Its ſubſtance is melting, and of a highly muſked flavour.

The tree produces little wood, and is only fit for a wall in moſt places of Scotland:

land: and if it is properly pruned, it makes a fine appearance on a wall.

N°. 9. I ſhall now deſcribe a few pears that are contemporary in their ripening with the above kinds, and of a larger ſize, and ſome of them of ſuperior goodneſs.

Forrow-cow is a large pear, headed, and flat towards the eye, with a ſhort foot-ſtalk. Its colour is red and yellow; its fleſh is tender and muſked.

The tree thrives well, and is a good bearer as a ſtandard.

N°. 10. Jargonelle is a French pear. (*pyrus fructu eſtivo, oblongo, ferrugineo, carne tenera moſchata*, TOURNEF. *Cuiſſe Madame*, QUINTINYE) It is large and long, of an iron colour next the ſun, and of a greeniſh yellow colour on the oppoſite ſide. Its fleſh is tender, juicy, and peculiarly delicious: it ripened the middle of Auguſt 1762.

The tree produces large long wood-branches, in a very irregular manner, and does not bear well till it be grown old. The Jargonelle never makes a beautiful tree, either as a ſtandard, eſpalier, or dwarf. It may be trained againſt a wall, but requires great room.

N°. 11.

N°. 11. Ladies-thigh is ſo called from its finely tapered ſhape, and ſmooth ſoft ſkin. It is large, the pulp is tender and juicy, and of a pleaſing taſte, being a little muſked.

The tree produces ſmall regular branches, but it does not bear well till old. When properly trained it makes a fine dwarf.

N°. 12. Large Blanquette (*pyrus fructu eſtivo, albido, majore*, TOURN. *Groſſe blanquette*, QUINTINYE) is oblong, a little coloured where it was expoſed to the mid-day ſun, but white where it was ſhaded. Its fleſh is breaking and tender, ſometimes a little ſtony; its juice is ſweet and agreeable.

The wood of the tree is ſmall and regular, and it makes either a beautiful ſtandard, or dwarf, but is a bad bearer.

N°. 13. Pear Sauch is a beautiful pear, of an oblong ſhape, big-bellied, and of a fine yellow colour: its eye and ſtalk are protruded, its pedicle is thick, and of a middling length; its ſubſtance is viſeid, its taſte is ſomewhat ſweet and muſked, and yet it is but a very indifferent pear; it was ripe the end of Auguſt 1762.

The tree is hardy, makes a large and beauti-

beautiful ſtandard, and is a great and conſtant bearer; ſo that no other kind of pear-tree is ſo profitable in an orchard as this is.

N°. 14. Muſk-drone pear (*fructu eſtivo, turbinato moſchato*, TOURN. *Bourdon*, QUINT.) is of a middle ſize, longiſh, and well ſhaped: its pulp is tender, ſugared, and muſky.

The tree is hardy, and grows regularly, but is generally old before it comes to bear.

N°. 15. Magdalene pear (*Magdalene*, QUINT.) is a large green pear, in ſhape reſembling the bergamot. Its fleſh is tender and melting, and its juice ſweet.

This tree makes a beautiful appearance, whether you plant it as a ſtandard, or train it as a dwarf.

N°. 16. Red Admiral (*Pyrus fructu eſtivo, globoſo, e viride purpuraſcente*, TOURNEF. *Amere roux*, QUINT.) is red coloured, inclining to purple: its figure is round, and the fruit is large: its pulp is tender and ſweet.

The tree grows regularly, and bears plentifully.

N°. 17. Summer Bergamot is of a ſhape nearly round, tho' rather thick towards

the ſtalk. In ſize and colour it nearly reſembles the autumn bergamot. Its pulp is tender, and its juice ſweet.

The wood of the tree is regular, and the branches groſs; but they are delicate and apt to canker.

Tournefort has very happily deſcribed this pear, when he calls it *pyrus fructu ſeſſili ſaccarato*. In ſeveral places of England, it is called Hambden's bergamot. In Scotland we meet with many pears of the name of bergamot, that vary much as to the times of ripening; tho' there is a ſtrong likeneſs among them in their ſhapes, and they differ but little as to their colours. The trees alſo reſemble one another a good deal, tho' a ſenſible difference may be obſerved in the manner of growth of moſt of the kinds. They indeed generally agree in this, that they produce but little wood, come in a few years to a bearing ſtate, and continue long in it, without making great advances in growth, or becoming large. The juices of theſe kinds of pears are perhaps not ſo highly flavoured in Scotland, as they are found to be when produced in warmer climates; and yet all of them are good fruit, except the winter bergamot, which

which is in ſome late wet ſeaſons but a very indifferent pear. The perfume which is peculiar to them, but particularly to the autumn bergamot, is but little diſcernible in the ſummer bergamot, and not at all in the winter.

As the name was originally derived from this perfume, it may be doubted, whether it is properly applied to any other but the autumn bergamot. But as it has long taken place in the others, and was probably firſt given to them, on account of their likeneſs to the autumn bergamot, I ſhall not venture to change it. Each of the kinds ſhall be particularly deſcribed; after which the reader may prefer any of them that he pleaſes. I now proceed to a pear that is inviting, by its beauty, its goodneſs, and its name: it is the

N°. 18. Summer Good Chriſtian. *Pyrus fructu oblongo, magno partim rubro, partim albido odorato*, TOUR. *Bon Chretien de Eſté*, QUINT. It is in ſhape long and regular; its ſmooth ſkin is of a greeniſh yellow colour where it grew in the ſhade, but ſtriped with red where it was expoſed to the ſun. Its pulp is tender and juicy, and is agreeably perfumed.

The

The tree grows regularly, thrives well, and makes a beautiful appearance; but it is a very bad bearer.

N°. 19. Little Rouſſelet, (*Le Rouſſelet*, QUINT.) is of a middle ſize, handſomely ſhaped, tho' ſomewhat long; of a greeniſh yellow when ripe, with a dark blackiſh red on the ſunny ſide. Its fleſh is tender, and its juice ſo deliciouſly perfumed, as ſufficiently diſtinguiſhes it from any other kind of pear.

The wood of the tree is weak, its ſhoots long, and its branches irregular: they are often killed in part, by the ſevere colds of ſpring in Scotland; yet in proper ſoils, and warm ſituations, it makes a tolerable dwarf, and an excellent ſtandard: it does well on a wall, and bears plentifully when old.

N°. 20. Scots Cornuck is large, and headed, flat towards the eye, and tapers to the ſtalk, which is thick and ſhort, of a yellow colour where not expoſed to the ſun, but of a bright red where it was expoſed. The fleſh is tender and melting; its juice is of an agreeable ſweetneſs, which is heightened by a fine aromatic flavour: it ripened in the end of Auguſt 176[illegible]. The tree

tree is hardy, vigorous, and grows regularly: it is a great bearer.

N°. 21. Grey Cornuck differs little from the above in ſhape, taſte, or flavour; tho' it is eaſily diſtinguiſhed by the grey colour, as its name denotes: it is likewiſe near a fortnight later of ripening. It was ripe the beginning of September 1762.

The appearance of the tree would perſuade us that it is a different kind from N°. 20. as its branches are ſmaller, more numerous, and the tree grows larger. The above pear-trees were probably firſt raiſed in Scotland, as neither of the kinds ſeem to be contained in any of the French or Engliſh catalogues that I have peruſed. They are excellent pears, not inferior in goodneſs to any ſummer-pears whatever. This kind is alſo an excellent bearer.

N°. 22. Longoville is nearly round, tho' flattened towards the eye, and protruded towards the ſtalk, which is thick and ſhort: it is a large pear, of an iron colour where expoſed to the ſun, and of a yellow colour on the oppoſite ſide. Its fleſh is tender and full of juice, which is an agreeable intermixture of acidity and ſweetneſs. This

pear was ripe the beginning of September 1762.

The tree produces many long ſmall branches, which are placed ſparſely; and the bearing ſpurs on them are placed at a conſiderable diſtance from one another. The trees become very large; and when old, they are conſtant, tho' not great bearers. They are fitteſt for ſtandards, and make a fine appearance with their branchy and wide-extended heads. This pear-tree is ſaid to have been originally brought from France, tho' it is not found deſcribed in any of their catalogues.

N°. 23. Red pear Robert (*pyrus fructu turbinato, carne tenera ſaccharata*, TOURN. *Muſcat Robert*, QUINT.) is not very large; it is headed, the eye ſomewhat depreſſed; it is protruded towards the ſtalk, which is long, ſtraight, and tolerably thick: where expoſed to the ſun, it is of a crimſon colour, but ſtriped with red and yellow on the oppoſite ſide. Its fleſh is tender, ſweet, and muſked. It was ripe the beginning of September 1762.

The tree generally grows vigorouſly, and bears well.

N°. 24.

N°. 24. Grey Honey pear is nearly round, being ſomewhat flattened towards the eye, but perfectly round towards the ſtalk, which is ſhort and thick. Its colour is a browniſh green, or ruſſet-grey; the fleſh is ſoft and ſweet: when it continues any time unconſumed after it is ripe, it turns meally. It ripened the beginning of September 1762.

The tree grows well, becomes very large, and bears plentifully.

N°. 25. Early Achan is ſo called from its reſemblance to the late Achan, which is much better known in Scotland. Its ſhape is regular, round at the middle, with a ſmall depreſſion towards the eye: it is alſo protruded towards the ſtalk, that is ſhort and thick: its colour is a dark red and yellow: it is ſhaped like the Achan. Its fleſh is tender and ſweet, tho' it is but an indifferent pear. It was ripe the beginning of September 1762.

The tree is a moderate grower, its wood is ſtrong, and it is a great bearer.

N°. 26. Skinleſs-pear (*ſans peau*, QUINT.) is a long-ſhaped pear; for the greater part of a dark red colour: its pulp is tender and delicate, and its juice ſweet and agreeable.

The tree grows regularly, and looks handſome in whatever manner you train it.

N°. 27. Hanging-leaf is a beautiful pear, of a perfect round figure, were it not a little protruded towards the ſtalk, which is ſhort, and of a middling thickneſs. Its colour is red and yellow: its ſubſtance is tender and juicy; and a delicious ſweetneſs is found in its taſte. It was ripe the beginning of September 1762.

The tree grows very large, and makes a beautiful ſtandard, but is no great bearer.

N°. 28. Scots Bergamot is a large pear, which would be perfectly round, were it not a little depreſſed towards the eye: its foot-ſtalk is thick and ſhort: its colour is yellow and red: its fleſh is tender and juicy; and its juice of a very agreeable ſweetneſs. The fruit were ripe the beginning of September 1762.

The tree produces ſhort thick branches, and is a good bearer; when it is properly managed at firſt, it makes a fine round full dwarf. It will alſo do very well as a half-ſtandard, or ſtandard, and is in every ſhape hardy, and a good bearer.

The above pears which are deſcribed, are ſome of thoſe that I carefully examined in the

the year 1762, the beſt year for fruit that I have ever ſeen: they were earlier ripe than in ordinary years, and that fine ſeaſon exalted all their good qualities to an extraordinary degree. I conſidered them with attention, and endeavoured to form as certain a judgment as poſſible of their figure, colour, ſubſtance, taſte, and flavour, and have honeſtly communicated the reſult of my obſervations, and have generally made uſe of the vulgar names under which they are known in Clydeſdale. Beſides thoſe pears that have been made mention of, I have examined many others, the names of which I have not learned; but I took a figure of each, and deſcribed them with as much accuracy as poſſible, with deſign of communicating them to the public, as ſoon as I ſhould be able to ſatisfy myſelf with regard to the fruit, the nature of the trees, as to their growth and bearing. I have purpoſely omitted taking notice of ſeveral ſummer-pears, that are to be found in the works of the French and Engliſh writers on the ſubject of fruit-trees. The curious may conſult their writings; and by the directions which they will find contained in them, they will be able to apply

to the nurſerymen, and may make trial of ſuch kinds as they ſhall chuſe. For my part, after many years experience, I would recommend the kinds of pears that are deſcribed, and commonly to be found in Scotland, to any of the foreign kinds that are omitted; as the fruit are at leaſt equal to, if not ſuperior in goodneſs; and the trees are much hardier, and ſeveral of them better bearers than any that I ever ſaw imported from France, or brought down from England.

Several of the pears that are laſt deſcribed, only acquire maturity in ordinary ſeaſons about the middle of September; ſo that the reader is not to reckon it any miſtake, ſhould they make their appearance even later than the time mentioned. But leſt he ſhould miſtake my meaning, it is proper to inform him, that the fruit were examined not on their firſt appearance, but when they were generally ripe; and that by the beginning of a month, is meant from the firſt to the tenth day: by the middle, is underſtood from the tenth to the twentieth: and the end comprehends all that remains from the twentieth to the end of the month.

Theſe

Theſe points being fixed, we now proceed to communicate our experience on the pears of the ſecond claſs, cloſely confining ourſelves to the ſame method that we have hitherto purſued.

CLASS II.

Of Autumnal Pears.

ALL of theſe may be kept for ſome time after they are taken from the trees, without loſing any thing of their goodneſs. Several of the kinds are poſſeſt of a very great degree of that perfection which is to be found in pears. I ſhall deſcribe ſeveral of them, keeping nearly to the order of time in their ripening, and beſtowing moſt pains on the beſt of the kinds. We now proceed to preſent our readers with ſome good autumnal pears, that ripened the middle of September 1762, and in the year 1764, and were deſcribed from the fruit when in a ſtate of maturity: and tho' we are ignorant of many of their names, yet we hope ſome time after this, to be able to affix their names to the figures, which ſhall be publiſhed with all convenient ſpeed. In

the mean time, the reader may conſider with himſelf, if the kinds to be recommended are worth the enquiring after; that is, if they are preferable to the kinds of this ſeaſon which he already poſſeſſes.

N°. 1. Keather is a pear of a middling ſize, finely rounded off to the eye, and of an oblong ſhape to the foot-ſtalk, which is generally ſomewhat protruded to one of the ſides; and is ſhort and ſmall. Its colour is moſtly yellow: its ſubſtance, tho' viſcid, has an agreeable juice, which is very taſteful. It ripened the middle of September 1764.

The tree grows regularly, becomes very large, and makes a beautiful ſtandard. The Keather bears but ſeldom; however, in favourable ſeaſons, it produces very large crops.

N°. 2. French Cornuck is a large pear, regularly rounded off towards the eye, which is in ſome of them a little depreſſed. It is of an oblong form to the ſtalk, which is generally ſhort and ſtraight. This pear has commonly one ſide larger and longer than the other: it is of a red, dun, and yellow colour; the fleſh is tender and full

full of juice, which has a pleaſant taſte. It was ripe the middle of September 1764.

The tree both grows well and bears well. It may be trained in any ſhape you pleaſe.

N°. 3. I received the following pear under the name of Crawford: it is large, and bellied; rounded off to the eye, which is depreſſed; tapers off gradually till it approaches near to a ſtalk, when after a ſmall round it flattens towards it. The foot-ſtalk is of a moderate length, and generally ſtraight: its colour is red and yellow; its fleſh is tender, juicy, and ſweet. This is as beautiful a pear as grows, full as large as the Jargonelle, or perhaps the winter Good Chriſtian. It was ripe the middle of September 1762.

The tree produces its branches long and ſparſe: they are of a middling ſize; it is not very beautiful, but bears well.

N°. 4. Watery pear. Under this name I received a kind of fruit which appears to me to be well intitled to the name of Ruſſet-pear, from its colour: for it is of an iron-colour to the ſun, and ſomething aſh-coloured on the ſhaded ſide. It is of a middling ſize, headed, and rounded off to the eye;

eye; that is, a little protruded: it gradually diminiſhes towards the ſtalk, which is ſtraight, and of a middling length. The ſubſtance of this pear is tender, and full of juice, which is agreeably muſked. It ripened the middle of September 1762.

The tree grows regularly, and is a conſtant and great bearer.

N°. 5. I received under the name of the Robin, a pear which perhaps deſerves the name of the Muſcat Robert, as it does not greatly differ, either in ſhape, colour, or taſte, from the one of this name which is deſcribed by Quintinye. Its figure is very near round, tho' a little flattened to the eye. Its foot-ſtalk is protruded from one ſide of the pear, and makes an acute angle with the other ſide; it is ſhort, and of a middling thickneſs. The colour of this pear is dark red and yellow; the ſubſtance is very tender and full of juice, that is finely muſked, and of an exceedingly agreeable ſweetneſs. It ripened the middle of September 1762.

The tree grows tolerably large, and is a good bearer.

N°. 6. The round pear is ſmall, perfectly globular, with a very ſhort pedicle. It

It is aſh-coloured and yellow: its fleſh is tender, ſweet, and muſked. It was ripe the middle of September 1762.

The tree, in its growth, not a little reſembles the Scots bergamot, only its wood is ſmaller, its branches more numerous, and it grows faſter: it is a tolerable bearer.

N°. 7. The vinous pear is tolerably large, and almoſt round: the one ſide is generally bigger than the other, by its forming a protuberance before ſending of the ſtalk, which is long and crooked, and placed nearly at right angles with the little ſide. Its colour is red and yellow; its fleſh is tender and melting; and its juice, which is copious, is exalted by a vinous flavour, joined to a very agreeable mixture of ſweet and acid. This pear was ripe the middle of September 1762.

The tree grows moderately, and bears indifferently well.

N°. 8. Chapman pear is equally rounded off; but the one ſide forms a much larger circle than the other; and this renders the pedicle of the pear, which is placed obliquely, ſhorter on one ſide than the other. Its colour is a ſhining red and yellow; its ſubſtance is viſcid, dry, and

ſweet. It ripened the middle of September 1762.

The tree grows well, and bears indifferently well.

N°. 9. Elſhin haft, or good man pear, is a large fruit, bellied, flattened a little towards the eye: it tapers off for ſome way, and then is rounded off to its foot-ſtalk, which is ſmall and ſhort. It is of a green and yellow colour: its fleſh is hard and dry, but of a very agreeable ſweet taſte. It was ripe the end of September 1762.

The tree grows vigorouſly, becomes large, and bears plentifully.

N°. 10. Great Ruſſelet. This pear differs from the little ruſſelet, by being thicker and ſhorter: the ſkin is not ſo poliſhed, but more ſpotted: it is alſo later of being ripe, and the juice is not ſo delicious.

The tree produces a few ſtrong woody branches thinly placed, and of great length. It is entirely unlike the little ruſſelet, for it is juſt the reverſe. It is a bad bearer. This fruit is called in ſome places of Scotland the grey gooſe. Quintinye probably was not acquainted with this pear; or perhaps he did not think it deſerved a place

place among his good pears.—We now come to deſcribe ſome of the pears that ripen in the month of October: it is probable, that many of them are indigenous in Scotland; and we have juſt reaſon to boaſt of them, as few foreign pears of this ſeaſon can be compared with them for either beauty or goodneſs; and the trees in general are hardier, and bear better than any exotic kinds.

N°. 11. Orange Bergamot is of a middling ſize, nearly round, tho' it has its eye conſiderably depreſſed, and is protruded towards the ſtalk, which is generally long, thick, and ſtraight. Its colour is red and yellow; many of them have a furrow down the middle. Its fleſh is tender, and full of a muſked juice, which is deliciouſly ſweet. It was ripe the beginning of October 1762, on a north-weſt aſpect.

The tree thrives well in every form, and is a great bearer.

N°. 12. Robine (*Pyrus fructu globoſo, ſeſſile, ex albido, flaveſcente, ſaccharato, odorato*, TOURN. *Robine*, QUINT.) is of a large ſize, and of a long ſhape, often keeping nearly the ſame thickneſs from one end to the other. It is rounded off to the eye,

which is a little depreſſed, particularly on one ſide; and alſo to the ſtalk, which is depreſſed in like manner as the eye: its pedicle is ſhort and thick. The colour of this fruit is a whitiſh yellow, and the ſkin is ſoft: its ſubſtance is breaking, without being hard, and its juice is ſugared, and charmingly perfumed. The fruit were ripe the beginning of October 1762. The above pear agrees in ſubſtance and taſte, but differs widely in the ſhape and ſize from the French pear of this name.

The tree makes a beautiful dwarf, eſpalier, or ſtandard, for it grows moderately. The tree is generally old before it comes to bear.

N°. 13. French Bergamot. I here deſcribe a pear which goes under that name in Scotland: it is almoſt round, being only a little flattened towards the eye, and a little protruded towards the foot-ſtalk, which is ſhort and thick. Its colour is red and yellow: its fleſh is tender and full of juice, which is ſweet, and of a fine reliſh. It was ripe the beginning of October 1764.

The tree produces but few wood-branches, that are rather delicate. When the tree is thriving, it bears tolerably.

N°. 14.

N°. 14. Late Scots Cornuck is a large fruit, of a true pear ſhape, being rounded off from the middle to the eye, and tapering from thence to the ſtalk, which is very ſhort, and ſometimes waved. Its colour is a bright red and yellow, and its ſkin is ſmooth and ſhining: its fleſh is tender and juicy, and its ſweet taſte is exalted with a vinous briſkneſs. It was ripe the beginning of October 1764.

The tree thrives well, and bears plentifully. Thoſe who are ſkilful in the art of pruning, may train it into any ſhape they pleaſe.

N°. 15. Pear-roſe is a ſmall fruit, nearly round, with one ſide larger than the other. Its foot-ſtalk is of a moderate length and thickneſs: it is red, and of an aſh-coloured yellow. Its ſubſtance is tender and dry, and is very pleaſant, by an aromatic and ſweet taſte being combined. It ripened the beginning of October 1764.

There is a ſummer pear of this name, with a long ſtalk, which is far inferior to this in goodneſs.

The tree thrives well, and bears tolerably.

N°. 16.

N°. 16. Vicar is an oblong pear, produced to the ſtalk, which is long and ſtraight. Its colour is yellow, red, and ſtriped: its fleſh is tender, ſweet, and muſked, but is rather too dry. This pear ripened the middle of October 1762.

The tree grows regularly, and has numerous branches, which are ſurrounded with very fertile ſpurs; by means of which it is a conſtant and great bearer. This tree is ſometimes deſtroyed by too intenſe heat.

N°. 17. Autumn, or Engliſh Bergamot (*pyrus fructu ſeſſile, ſaccharato, odorato, in ore liqueſcente*, TOURN. *La Bergamotte*, QUINT.) is a large round pear, generally flattened a little towards the eye, and ſomewhat depreſſed to the foot-ſtalk, which is ſhort and thick. It is of an iron-green and yellow colour: its fleſh is tender, and full of juice, of a delicious ſweetneſs, and an agreeable perfume. This pear ripened the middle of October 1762, on a ſouth-eaſt aſpected wall.

The tree is neither fit for being trained as a dwarf or eſpalier, but makes a beautiful ſtandard or wall-tree, and is a plentiful bearer.

N°. 18.

N°. 18. Muir-fowl-egg is a large pear, which is nearly round, being only a little flattened towards the eye, which is ſomewhat depreſſed; but it is finely rounded off to the ſtalk, which is long, large, and generally crooked. Its colour is red, green, and yellow; its fleſh is tender and juicy: it is reckoned delicious by thoſe who are fond of much acid in pears; for my part, I think it over-abounds in this fruit. It was ripe the middle of October 1762.

The tree grows vigorouſly, producing many long branches, which are thinly placed in its head: they are in time covered with ſpurs, which bear copiouſly when the tree is old.

N°. 19. Gray good-wife is a pear of a middling ſize, which might be reckoned round, were not its eye a little depreſſed, and its ſhape a little protruded towards the ſtalk, which is of a moderate length and thickneſs: it is of a brown red on the one ſide, and of a greeniſh yellow on the other. Its ſubſtance is ſoft and tough, yet it melts in the mouth: its juice is ſweet, with a very agreeable perfume, which is peculiar to this pear. It was ripe the middle of October 1762.

The tree grows vigorouſly, makes a beautiful appearance, and is a conſtant and great bearer.

N°. 20. Creſſan (*Pyrus fructu ſeſſili, e viridi flaveſcente, utrumque umbilicato, in ore liqueſcente*, TOURN: *Craſane*, QUINT.) is large and ſemiglobular, flattening almoſt its crown to the eye, but nearly circular to the ſtalk, which is long, and generally ſtraight. It is of a greyiſh colour mixed with red ſpots; when ripe, the ſkin is rough; its ſeeds are remarkably large; its fleſh is exceeding tender and ſoft; the juice is copious, ſweet, and briſk. This pear does not agree with the deſcription that is given from Tournefort. It was ripe the middle of October 1762, on a ſouth-eaſt aſpected wall.

The tree is only fit for a wall in Scotland, where it produces too much wood, and is but a very indifferent bearer.

N°. 21. Verte long, or long green pear, (*Pyrus fructu odorato, in ore liqueſcente*, TOURN. *La Verte longe*, QUINT.) is large and long, of a true pear-ſhape, with a thick ſtalk of a middling length. It is generally of a green colour, freckled all over with ſmall ſpots: theſe ſpots are white where the

the ſkin is coloured by the ſun, and of a dark green where it is yellow, which colour the green acquires in ripening. Theſe pears are of a ruſſet colour next the ſun: their pulp is melting, ſoft, and juicy, and the taſte in ſome ſeaſons is ſweet and agreeable; in others, it is inſipid. It ripened the middle of October 1762, on a ſouth-eaſt aſpected wall. The wood of the tree is ſtrong, and grows regularly. The Verte long makes a beautiful appearance in every ſhape, and bears admirably well.

N°. 22. Pound pear is a very large pear, of a ſemiglobular figure, being flattened towards the eye, which is a little depreſſed, but perfectly circular to the ſtalk, which is ſmall and ſhort. The colour of this charming pear is red, green, and yellow; its ſubſtance is between tender and viſcid; its taſte is ſweet, and in its juice is ſomething of a very pleaſant aromatic. It was ripe the end of October 1762. The tree thrives vigorouſly, and bears well in warm ſituations and proper ſoils.

N°. 23. Swan's-Egg pear is of a middling ſize, oblong and roundiſh, but a little protruded towards the ſtalk, which is

ſhort and ſmall. It is of a dark green colour: the pulp is ſoft, and the juice, which is copious, is of a very agreeable ſweetneſs. It ripened the end of October 1762, on a ſouth-eaſt aſpected wall.

The branches of the tree are apt to canker and die down in part, or entirely; neither does a wall ſave it from this. Even when it is in a disfigured condition, it bears tolerably on any of the branches that remain alive. What pity is it, that this tree ſhould prove ſo delicate, when we have few kinds of pears that excel the ſwan's-egg!

N°. 24. Muſcat Fleury (*Pyrus fructu globoſo, ferrugineo, carne tenera ſapidiſſima*, TOURN. *Muſcat à longue queue d'automne*, QUINT.) is a very ſmall pear, of an almoſt globular figure, and of a dark red, or rather brown colour, with a long foot-ſtalk. Its fleſh is tender and juicy, with ſuch a delicious perfume as is to be found in no other pear that I know of. This pear generally ripens about the middle of October.

The tree is not beautiful, for it produces long naked wood-branches, that have but few bearing ſpurs on them; yet it bears a great

great many fruit, for they are generally placed in cluſters. It is called in ſome places of Scotland Pear-nut.

N°. 25. Dean pear (*Pyrus fructu turbinato, ſeſſili, flaveſcente, in ore liqueſcente*, TOURN. *Doyenne*, QUINT.) is reaſonably large, rather long than round, of a greeniſh yellow colour, which is little altered by the ſun. Its juice is ſweet, and a little muſked, but has not a very high flavour. This fruit is apt to turn dry and meally, after it is paſt its prime in maturity.

The tree is beautiful, and bears much fruit, eſpecially on a wall.

N°. 26. Swiſs Bergamot. This pear reſembles the autumn bergamot in ſhape and ſize, but is eaſily diſtinguiſhed from it by a fine ſtriped colour: its ſubſtance and taſte is little different from thoſe of the Engliſh bergamot; but what intitles it to a place in this collection is, that the tree is hardier, and will make a fine appearance in the open air in any ſhape that you pleaſe to form it into; and it will reward your labour, for it is a good bearer.

N°. 27. Monſieur John. Of this they reckon two kinds, the white and the grey. (*Pyrus fructu tuberoſo, ſeſſili, ſaccharata*

carne dura, TOURN. *Le Meſſire Jean*, QUINT.) Theſe pears are tolerably large, their ſubſtance is hard and breaking, and their juice is ſweet. It has been objected to them, that their ſubſtance is ſometimes gritty. The trees are hardy, they make a good figure in every ſhape when properly trained, and they generally bear well.

N°. 28. Marquis's pear (*Pyrus fructu tuberoſo, ſeſſili, e viridi flaveſcente, maculis nigris conſperſo, carne tenera ſaccharata*, TOURN. *La Marquis*, QUINT.) is very large and handſomely ſhaped; the head is flat, the eye is ſmall and ſunk in, the belly big, and the ſize diminiſhes gradually to the ſtalk: the ſkin is rough and yellow, with red ſpots; when ripe, its fleſh is tender and fine; its juice is plenteous, and agreeably ſweet.

The tree makes a good ſtandard, dwarf, or eſpalier, and is a tolerable bearer.

N°. 29. Beurre (*Pyrus fructu ſuaviſſimo, in ore liqueſcente*, TOURNEFORT. *Beurre*, QUINT.) is a large pear, of an oval ſhape, with a ſhort thick foot-ſtalk. The colours of this ſpecies are ſo various, that they have occaſioned the name of grey, red, and green, among the nurſerymen: its fleſh is fine

fine and delicate, and its taſte exalted by a ſweet aromatic perfume. It ripened the end of October 1762, on a ſouth-eaſt aſpect.

The wood of the tree is weak, the branches are numerous; it thrives well on a wall, tho' it is even there no great bearer. There are perhaps few ſoils and ſituations in Scotland, in which the beurre will thrive and bear in the open air.

The above are the kinds of autumn pears which I have thought proper to ſelect and deſcribe particularly, from a much greater number of which I have made trial. What determined me to make choice of the above, was, either the properties of the trees, or the good qualities of the fruit. They are by far too numerous to enter into any plan that is meant for the uſe of a private family; and many of the kinds, were they planted in an orchard, would never indemnify the farmer, as they thrive but poorly, and the crops are uncertain in a clime like ours, ſubjected to ſuch viciſſitudes of weather, and extremes of heat and cold. But the knowledge of variety can hardly perplex the planter, where the ad-

vantages and diſadvantages of each particular kind are ſo clearly pointed out. My readers who chuſe to be acquainted with a greater variety of Engliſh kinds, may conſult Mr. Switzer, or Mr. Miller, where they will find many other kinds of which they may make trial.

I ſhall now endeavour to communicate the knowledge I have acquired of the laſt claſs I made mention of, or the winter pears that are commonly to be found in Scotland; and ſhall deſcribe ſuch kinds as are hardy, and generally bring their fruit to maturity in ordinary ſeaſons.

CLASS III.

Of Winter Pears.

I SHALL, in treating of this claſs, begin by deſcriptions of ſuch pears as are found to be fit for eating in the beginning of November, and ſo proceed with the fruit that follow in the order of their ripening; nor ſhall I here deſert my plan, but continue to pay a particular regard to the hardineſs of the tree, and the good qualities

ties of the fruit. I begin with the fruit of a tree which was probably firſt found in Scotland.

N°. 1. Brier-Buſh is a ſmall pear, nearly round, with a ſhort thick foot-ſtalk: when ripe, it is of a red colour where it was expoſed to the ſun, and yellow on the other ſide: its fleſh, tho' hard, is juicy, and full of an aromatic taſteful ſweetneſs. It was ripe the beginning of November 1762.

The wood of the tree is ſmall, the branches are numerous, the ſpurs on the branches frequent, and the tree is remarkably fruitful.

N°. 2. Achan is a large pear, with a big belly; it turns leſs to the head, and flattens to the eye, which is a little depreſſed. It is ſomewhat protruded towards the ſtalk, which is of a middling length and thickneſs. Their colour is commonly a dark red, or very deep blackiſh green; but this varies greatly, as does alſo their ſhape, for I have ſeen them of a light green or yellow, and many depreſſions of different ſizes on their ſurfaces: but of whatever colour they are of, they have this in common,

Achan a hardy.

mon, that the pulp is fine, ſoft, and free, full of a richly ſugared and perfumed juice, which is of ſo excellent a reliſh, as at leaſt equals, if it does not excel any taſte that is to be met with in pears. This pear was ripe the beginning of November 1762, on a ſouth-eaſt aſpected wall.

The tree produces its wood regularly. Its ſhoots are long; they become full of ſpurs, which are placed all round them, near to one another; and it is generally a great bearer when old. The Achan is hardy, and makes a beautiful figure in every ſhape, when it is properly managed, whether it make its appearance in the fruit-garden or orchard.

N°. 3. Winter Thorn. (*Pyrus fructu magno pyramidato, albido, in ore liqueſcente, ſaccharato, odorato*, TOURN. *L'Eſpine d'hyver*; QUINT.) Its ſhape is long, nearly pyramidal, prettily rounded off at each end: its ſkin looks and feels like ſattin: the colour is between green and white, or rather a ſhining yellow: its fleſh is free and tender; and its juice is a delicious mixture of ſweet and acid, joined to an admirable perfume. This pear ripened the beginning of November 1762, on a ſouth-eaſt aſpected wall.

The

The tree produces long regular branches, that are thick ſet round with bearing ſpurs; among theſe, are produced ſome few thorns, or rather ſharp-pointed branches. It makes a fine appearance on a wall, and is a good bearer.

N°. 4. Virgoleuſe (*Pyrus fructu longo, e viridi flaveſcente, in ore liqueſcente, ſaccharato*, TOURN. *La Virgoule*, QUINT.) is beautiful and large, of a true pear-ſhape, but in ſome inclining to round. The colour is green when they are gathered from the tree, but turns yellow as they ripen. The fleſh, when it comes to perfection, is tender and melting, full of a ſweet and ſharp juice, which is a little perfumed. The pears of this kind that fall off too ſoon from the tree, tho' they become wrinkled, are excellent. But this pear in general is apt to contract the bad ſmell and taſte of any thing in its neighbourhood; for which reaſon, it ſhould be kept carefully at a diſtance from any thing offenſive in ſmell or taſte. This pear ripened the beginning of November 1762, on a ſouth-weſt aſpected wall.

The tree has a ſhining bark, produces plenty of ſmall regular wood-branches, and makes

makes a beautiful appearance on a wall when properly trained: it is no great bearer till old.

N°. 5. Chaſſery (*Pyrus fructu globoſo, citriforme, flaveſcente, punctato, in ore liqueſcente, ſaccharato, odoratiſſimo*, TOURN. *La Leſchaſſerie*, QUINT.) is large and long-ſhaped like a lemon, of a yellow colour when ripe. Their ſubſtance is fine, melting, and juicy, of a highly perfumed and aromatic ſweetneſs. This pear ripened the beginning of November 1762, on a ſouth-eaſt aſpected wall.

The wood of the tree is weak, its branches are few, and produced at a diſtance from each other: it is no great bearer till after it has ſtood ſome years, when it bears plentifully. It is only fit for a wall in Scotland, to which it is eaſily trained, as it produces but few branches, and grows regularly, ſeldom producing any luxuriant branches.

N°. 6. Ambrette (*Pyrus fructu globoſo, ſeſſili, ferrugineo, in ore liqueſcente, ſaccharato, odoratiſſimo*, TOURN. *L'Ambrette*, QUINT.) is nearly as large as the winter-thorn: it is round, and very various as to the length and thickneſs of the ſtalk. Its ſkin, which

is

is rough, and of an iron colour when taken from the tree, becomes yellow when ripe. Its fleſh is tender, juicy, and free; and its taſte is of a delicious ſweetneſs, which is exalted by an aromatic perfume. This pear ripened the beginning of November 1762, on a ſouth-eaſt aſpected wall.

The tree produces few wood-branches, but many bearing ones, of which number are many of the thorns that it ſhoots out. It does well on a wall, as its wood is ſmall and weak: it is a conſtant and great bearer.

N°. 7. Saint Germain (*Pyrus fructu longo, e viridi flaveſcente, in ore liqueſcente*, TOURN. *La Saint Germain*, QUINT.) is very large and long; they are irregularly ſhaped, and very various in their figures. We have commonly found them of a green or reddiſh colour, which turns yellow as they ripen. The pulp is tender, ſometimes a little gritty; it is full of a briſk pleaſing juice; the ſweetneſs of the taſte being much exalted by a little acid. It was ripe the beginning of November 1762, on a ſouth-eaſt aſpected wall.

The tree produces many regular and beauti-

beautiful branches: it makes a fine appearance in every ſhape, and is a plentiful bearer, as well in the open air, as on a wall.

As the pears that are contained in the five preceding numbers are all of them French pears, we ſhall now endeavour to find out ſome Scots pears of the ſame ſeaſon. I ſhall offer a few that I have carefully examined, and prefer on account of their good qualities, tho' I am ignorant of their names. The firſt I ſhall make mention of, is the

Scots pear

N°. 8. Round conical pear, which I have named from its ſhape, being finely rounded off from its middle to the eye, and from the ſame part to the ſtalk, being perfectly conical: its foot-ſtalk is ſhort; its colour is brown and yellow; its ſeeds are very ſmall; its fleſh is viſcid, and of a ſweet taſte. It ripened the middle of November 1764.

The tree thrives well, and bears well.

N°. 9. Round winter pear I have denominated from its ſhape, being nearly round, with a ſhort, ſmall, ſtraight foot-ſtalk. It is of a yellow colour: the ſeeds

are

are large, and its flesh is tender, and of a very pleasant aromatic sweetness. It ripened the middle of November 1762.

The tree grows vigorously, and bears well.

N°. 10. The oblong round winter pear is thickest about the middle, with its eye and stalk protruded beyond the circle: its foot-stalk is short and thick: in its shape it very nearly resembles the swan's-egg: it is of a straw colour: its flesh is tender and full of juice, which is of a delicious aromatic sweetness. It ripened the beginning of November 1762.

The tree thrives well, and produces much fruit.

N°. 11. Winter bergamot in shape and size nearly resembles the autumn bergamot, but differs from it, by being much lighter in the colour, which is a greenish yellow. Its foot-stalk is short and small; its substance is tough and viscid, dry, and unpleasant to the taste. It ripened the beginning of November 1762. I shall say nothing of the tree, as no farmer ought to plant so bad a kind.

N°. 12. Colmar (*Pyrus fructu tuberoso, e viridi*

e viridi flaveſcente, punctato, ſaccharato, TOURN.) is very large; its head is flat, with the eye placed pretty deep; its belly is larger than the head: from this, the ſize diminiſhes irregularly to the ſtalk, which is ſhort and thick. The colour of the fruit is green; the ſkin is ſpotted, ſoft, and ſmooth; the fleſh is tender, and the juice ſweet and agreeable. The fruit may be eaten from the beginning of December to the month of April. The tree will ſucceed on any aſpect, tho' the fruit will hardly acquire the proper degree of maturity on any other than a ſouth-eaſt, or ſouth aſpect; nor need we reckon on this fruit in Scotland, unleſs in low warm ſituations, and good ſoils. The bark of the tree is of a dark brown colour, with white ſpots.

N°. 13. Green Sugar pear is rather long than round: it is flattened towards the eye, and conical to the ſtalk, which is long, and pretty thick. It is of a green colour; its fleſh is tender, and full of a very agreeable ſweet juice. It ripened December 2d, 1765, on a weſt-north-weſt aſpected wall.

The

The tree produces long wood-branches, which are ſurrounded with ſpurs that bear plentifully.

N°. 14. Saint Martial is a very large and long pear, of a pyramidal ſhape. It is of a bright ſtraw colour, with ſome black ſpots intermixed. The pulp is ſweet and juicy, and of a vinous taſte.

The tree can only ſucceed on the beſt aſpects, even on walls; nor need we reckon on ripe fruit on any other than ſouth, or ſouth-eaſt aſpects.

N°. 15. Winter Good Chriſtian (*Pyrus fructu magno, pyramidato, e flavo nonnihil rubente*, TOURN. *Le Bon Chretien d'hyver*, QUINT.) is of a beautiful figure, long, and pyramidal; it is from three to four inches broad, and from five to ſix inches high; and according to Quintinye, the weight is from one to two pounds. It is of a carnation colour, with a yellow ground when ripe; its fleſh is breaking, and ſometimes tender: its taſte is agreeable, having plenty of ſweet perfumed juice.

The tree grows vigorouſly, is hardy, and bears very large fine fruit on a well aſpected wall, where it can alone be planted to advantage in Scotland.

Many other kinds of pears that ripen after the beginning of November, are to be met with in Scotland; but let it ſuffice to have deſcribed ſome of the beſt and moſt profitable kinds. Several others may alſo be ſelected from the French and Engliſh catalogues, and may readily enough be procured from the nurſerymen at London. It is well worth the while of the curious planter to make trial of new kinds, as he may perhaps at laſt light on ſome that are at leaſt equal in goodneſs, if not preferable to ſome of theſe kinds that have been deſcribed.

Before I leave the ſubject of pears, it ſeems proper to take notice, that the times of ripening of particular pears are nearly the ſame in the French and Engliſh catalogues. Can we believe that this is owing to the near reſemblance in the ſoils and climes of the two kingdoms? This we muſt conclude on the ſuppoſition of both of them having been the reſult of accurate obſervations; but may it not be ſuſpected, that ſome of the Engliſh writers have copied from the French, without having troubled their heads about obſerving? From the preceding obſervations, which have been made ſucceſſively for ſeveral years

years with no ſmall attention, we have diſcovered, that the kinds of ſummer and autumn pears which are found in the French and Engliſh catalogues, when they are planted in Scotland, are between three and four weeks later of ripening than the times that are there made mention of; and notwithſtanding this ſo conſiderable difference in the preceding claſſes of pears, the winter kinds ripen preciſely at the times that have been fixed on by Monſieur Quintinye. This would perſuade us, that tho' our ſeaſons are later than in England or France, with regard to their effects on fruit in ſummer and autumn, yet on the whole, their lateſt productions are equally perfect in pears before the approach of winter, as in either of the fore-mentioned kingdoms. At the ſame time, our regard to truth obliges us to declare, that in cold and bad ſeaſons, ſeveral pears of French extract do not acquire their proper degree of perfection, tho' thoſe that are proper to Scotland become perfectly good. Winter-thorns, ambrets, and leſchaſſeries, are in ſome years good for little; when brier-buſhes, ſwan's-eggs, and achans, are excellent in their kinds. It may alſo be ob-

ſerved in general, that foreign fruits are more delicate in their natures, and ſuffer ſooner with regard to their qualities, than Scots fruits do.

Having now finiſhed all that we intend for the preſent on pears, we turn our attention to apples, of which there is a ſurpriſing variety to be met with in Scotland; but as many of them deſerve not to be particularly deſcribed, we ſhall confine our inquiries to ſuch kinds as pleaſed us moſt, when we were making an exact ſcrutiny of the properties and qualities of ſeveral different ſpecies. Theſe we ſhall make the ſubject of the enſuing chapter, and ſhall only deſcribe ſome of the beſt kinds of them, after a manner ſimilar to that in which we have treated of pears; only we do not propoſe to claſs them into ſeaſons, as we have done pears, but ſhall place them nearly in the order of their ripening.

CHAP.

CHAP. IX.

Of Apples.

THIS fruit, and indeed every other fruit, is as old as the creation; and tho' ſpecies may change place by coming into favour, or be loſt by falling into diſrepute; and tho' varieties in theſe may be produced by chance, or with deſign, and be generally propagated from particular circumſtances; yet the production of a new kind of fruit, I mean in the ſenſe of the botaniſts, is inconceivable, nay, is impoſſible, without the interpoſition of that Almighty Power which in the beginning ſpoke the whole into being.

We are told by ſeveral divines, that this is the fruit with which the ſly ſerpent cheated the mother of human kind, and whoſe mortal taſte brought death into the world, and all our woe, with loſs of Eden. O fatal fruit! What a ſacrifice ſhe made! Immortality for an apple. The fruit were harmleſs; diſobeying the mandate of Heaven was the crime for which we ſuffer. Shall we then fix this fruit in

the garden of Eden? Be it ſo. Homer has given it a place in the garden of Alcinous, in the iſland of Pheacia.

Theophraſtus ſeems to have been well acquainted with this fruit. He informs us, that they had both early and late kinds in Attica.

Cato has made mention of ſeveral kinds in his book on Farming.

Columella has taken notice of eight kinds of apples, and given us their particular names. He has alſo made mention of three kinds of quinces that were to be found in Italy.

Pliny's liſt of apples I ſhall give in the ſame manner that I have done the one of pears.

LATIN.	FRENCH.	ENGLISH.
Petiſia	Pommes d'Api	Apius's Apple
Syrica	De Calville	Calville
Melapia	Poires	Pear Mains
Muſtea	Saint Jean	John Apple
Orbiculata.	Rambour.	Frank Rambourg.

Beſides the above, there are ſeveral other kinds contained in his catalogue; but it is no eaſy matter to determine if there are among them any of the kinds which we at

at preſent poſſeſs. It is here proper to inform the reader, that the above arrangement is only according to the opinion of Harduin.

In the works of Macrobius, a ſtill greater number of apples may be found; for he has given us the names of no leſs than twenty-three different kinds.

SECT. I. Apples have been regarded not only as alimentary, but alſo as medicinal, and with good reaſon; for where can we find a food more agreeable and nouriſhing to people in health, or of eaſier digeſtion, and equally ſalutary to the ſick? Even the ſmell of apples is remarkably chearing and refreſhing to many perſons in the languors of diſeaſes. It was probably for this reaſon that they have been treated on by Galen, Dioſcorides, and many other able phyſicians. Let me alſo obſerve, that cyder well made, and of a proper age, may vie with moſt kinds of wines, whether you conſider it as a pleaſant or healthſome liquor.

SECT. II. It is now proper to treat of this fruit as a planter, in which character I may obſerve, that they begin to ripen the end of July in Scotland. Theſe are the

very earlieſt kinds; and thoſe that follow make their appearance in a very agreeable manner; for as they conſtantly ſucceed one another, they may be made uſe of without interruption the whole year round.

SECT. III. The particular apples that are ſimultaneous with the pears of the ſeveral ſeaſons, continue longer without ſpoiling than the pears of the ſame ſeaſons; that is, they perſiſt longer in a ſtate of maturity, or may be eaten for a greater ſpace of time in a ſtate of perfection.

SECT. IV. Apples have been leſs ſtudied than pears, nor are thoſe yet reduced to any diſtinct order. The apparent difficulties have probably deterred the writers on this ſubject from making the attempt; nor is order likely to be ever introduced, conſidering the multiplicity of new kinds, or, to talk like a botaniſt, the varieties that are from time to time introduced.

SECT. V. It is to be regretted, that the names of many kinds have no relation to any property or quality of the fruit; ſo that they are not in any manner aſſiſting to us, in knowing or aſcertaining the kinds. Beſides the above, the names they bear are often vague, inconſiſtent, and fanciful.

Few

Few of them are general; and if we except a very few, none univerſal. Whether or not this is likely ever to be remedied, I ſhall not pretend to determine; only I cannot help obſerving, that many of the kinds which are commonly met with in Scotland, are neither worth knowing nor preſerving: that as to the good kinds, or ſuch as are really valuable, they are more eaſily known, and more readily diſtinguiſhed by the ſight, than by any other deſcription. For inſtance, a grey leadington, golden-pippin, golden-rennet, calville, nonpareille, or Apius's-apple, are almoſt univerſally known; for after regarding the fruit attentively, and conſidering the trees, we may acquire ſuch a diſtinct idea of both, as ſhall enable us afterwards to know them, whenever they are preſented to our ſight.

SECT. VI. Many kinds of apples reſemble one another very nearly in their ſhape, ſize, and colour, as the ſummer and winter pear-mains, &c. yet are ſufficiently diſtinguiſhed by their ſeaſons of ripening, peculiarities in the figure, manner of growth, of the wood and fruit-branches, as alſo in the leaves of the trees, which

which will ſerve to aſcertain many kinds to the attentive obſerver, tho' the knowledge of many of theſe particulars is not to be conveyed in words, but muſt be learned from inſpection.

SECT. VII. A very great difficulty ariſes to the curious in ſtudying of apples, from the multiplicity of names beſtowed on ſome particular kinds by different perſons. Some kinds have been claſſed together, tho' of very different ſizes, and even no ſmall variety obſervable in their ſhapes; but notwithſtanding the above, as a reſemblance is to be found among them in ſome of their eſſential properties, we ſhall ſuppoſe this manner of claſſing to be founded in nature, and exhibit a few of the kinds that have been thus ranked.

SECT. VIII. We ſhall begin with pippins. They are generally ſmall: ſeveral of them greatly reſemble crab-apples in their figure; and perhaps from this circumſtance, or their having been originally raiſed from ſeeds which are called pippins, they have obtained their names. They are of all ſeaſons. Van pippin probably firſt came from Holland; it is the earlieſt of any of the pippins. The following kinds

kinds are all good apples: Hamilton pippin, Ozlon pippin, Goſlar pippin, aromatic pippin, lemon pippin, Kerton pippin, Holland pippin, Pearſon's pippin, and golden pippin. The laſt named is highly valued by the Engliſh, and juſtly; it is a charming and pleaſant fruit.

SECT. IX. Rennets are another claſs of apples, that were probably firſt raiſed in France; for we muſt conclude this from the name, which denotes the ſubſtance of their fleſh. They are all of them late of ripening, and will keep long. If they are preſerved with care, ſome of them may continue good for more than a twelvemonth. Of this kind there are golden rennets, gray rennets, and white rennets: there is likewiſe the golden renneting.

SECT. X. Ruſſets were probably firſt raiſed in England, and have been ſo denominated from the colour of their ſkins. Of theſe we have many, that are ſimply called ruſſets. One ſpecies gets the name of Wheeler's ruſſet, and is eaſily diſtinguiſhable from the above. Another ſpecies is called Aclemy's ruſſet, and is evidently different from both of the preceding kinds. A fourth kind has with great propriety been

been called the golden ruſſeting, from the mixed colour of its coat.

SECT. XI. Pear-mains are denominated from their ſhape, which a good deal reſembles ſome kind of pears. Of this kind of apples we have a conſiderable variety; they are to be found under the names of ſummer pear-mains, winter pear-mains, Loane's pear-mains, royal pear-mains, and white pear-mains.

SECT. XII. Leadingtons are probably of Scots original; for ſo far as I know, they are to be met with in no foreign catalogue of apples. They are of different ſeaſons, tho' they are a good deal like one another in ſhape; they vary alſo in their colour. Of theſe we have four kinds in Scotland, that are readily known from one another; they are the ſummer leadington, the ſtoup leadington, the gray leadingtons, and the white leadingtons.

SECT. XIII. Before the entertainment it is proper to preſent the reader with a bill of fare, informing him what he is to expect. The beſt of early or ſummer apples have their pulp, when ripe, tender, juicy, and ſweet. Several of them have their taſte exalted by a very agreeable in-

termixture of acid, which is cooling and refreſhing, and exceedingly ſalutary in the ſcorching heats of ſummer. The apples of autumn are ſomewhat firmer in their fleſh, of a higher flavour, and more pleaſant taſte.

The winter kinds are the firmeſt of all in their ſubſtance, of the moſt exalted flavour, and the higheſt reliſh: when chewed, they diſſolve in the mouth, and charm us with their poignant and taſteful juices.

SECT. XIV. Nature does not entertain us with ſuch a profuſion of ſweets in the article of apples, as ſhe does in that of pears. The taſtes are fewer, and the flavours not ſo various: the acid is generally predominant in the firſt genus, a delicious ſweetneſs prevails in the ſecond; a briſkneſs of taſte is common to both, but is ſo peculiar to each kind, that it is eaſily diſtinguiſhed. The aromatic, or muſked flavour is only to be found in a very few kinds of apples, but is copiouſly united to the ſubſtance in many different ſpecies of pears. We are pleaſed with the breaking ſubſtance of apples; we are delighted with the melting tenderneſs of pears. By the greater duration of the firſt, ſhe has compenſated for the ſuperior excellency of the ſecond:

ſecond: and every grateful ſoul will regard both as bleſſings beſtowed on mankind by the beneficent Author of nature.

SECT. XV. It is now proper to give a particular deſcription of ſome of the beſt kinds of apples, or at leaſt of ſuch as appeared to us, on a careful ſcrutiny, to be the moſt commendable, and beſt to deſerve a place in the fruit-garden. Our views were confined to finding out ſuch fruit as may make a figure in the deſert, and be eaten with pleaſure. Kitchen apples are more generally known, and ſhould for the greater part be proſcribed the fruit-garden. It muſt indeed be acknowledged, that many of the kinds well merit the attention of the farmer; for they are great bearers, and are very profitable when they are planted in orchards. To the kinds which ſhall be here deſcribed, if ſuch as have been imported from France, we ſhall add the characters of Mr. Tournefort, and the names of Mr. Quintinye, in the ſame manner as has been done in the preceding chapter on pears.

SECT. XVI. It is proper to warn the reader, that the ſhape of any kind of apple varies greatly, even among ſuch as have been produced on the ſame tree; ſo that we were under the neceſſity of ſelecting an apple

apple of the ſhape which ſeemed to be the moſt common to the kind. The colour is generally deſcribed from ſuch fruit as grew in the open air. The time of ripening is ſet down when they appeared to be in the higheſt perfection. If the planter is ſo diſpoſed, he may make choice of ſeveral ſummer and autumn apples that are ſimultaneous with thoſe deſcribed, as many of the fruits of theſe two ſeaſons are nearly equal in their degree of goodneſs. The winter kinds are perhaps the beſt that are known.

N°. 1. Teuchat-egg is a ſmall yellow apple, of a reddiſh hue where expoſed to the ſun: it is in ſhape not unlike a grey leadington; its pulp is tender and juicy, its ſmell is chearing, and its taſte pleaſant, when planted on a north wall. The fruit will continue on the tree till the month of October; and the longer they hang on the tree, their ſmell and taſte become better. This fruit, when produced in the open air, is commonly ripe in the beginning of Auguſt. The tree produces ſmall regular branches, and makes a good appearance in every ſhape; it is alſo a great bearer.

There is alſo a winter apple which

exactly reſembles the above, and is generally called by the name of the winter Teuchat-egg. It ſubſtance is tender, juicy, and ſweet. It was ripe the beginning of March 1763.

The tree grows vigorouſly, and bears well.

N°. 2. King apple has little to boaſt of as to its colour; but it is pretty large, and of a good taſte for the ſeaſon.

N°. 3. Magdalene apple is a fair and beautiful fruit. Its colour is yellow, and ſtriped with red: the fleſh is free and juicy, of a pleaſant ſmell, and delicious taſte.

The trees of the two preceding kinds much reſemble one another; that is, the wood-branches of both are ſtrong, they grow vigorouſly, neither are they bad bearers.

N°. 4 and 5. Summer Calvilles (*Malus fructu magno, dilutè rubente, et inodoro*, TOURN. *Calvilles d'Eſte*, QUINT.) are of two kinds; the one of a white colour, the other of a red. They are both of them large long fruit, ſhaped alike, and flattened at each end. The fleſh of the red is not coloured, as in the autumn calville. Both of them are very beautiful, and the taſte

taſte of their ſubſtance is pleaſant and agreeable.

The trees are rather delicate, and apt to ſuffer from the colds in ſpring that ſo frequently happen in Scotland. They are tolerably good bearers.

N°. 6. Van Pippin is a round and ſmall apple, finely coloured with red and yellow. Its pulp is free, juicy, ſweet, and agreeable.

The wood of the tree is weak, its branches are regularly placed, ſo that its figure is beautiful. It is hardy, and bears well.

N°. 7. Ozlon Pippin is pretty large, roundiſh, and flat at each end. It is of a light yellow colour; the fleſh is firm, with a ſweet and pleaſant juice.

The tree is generally vigorous, and its growth is regular: it alſo bears well.

N°. 8. Rembourge (*pomus pregrandis, præcox, tenerrima*, TOURN. *La Rambour*, QUINT.) is a very large French apple, ſtriped with red on the one ſide, but green on the other. The ſubſtance of this fruit is free, and the taſte agreeable.

The tree does beſt as a ſtandard.

N°. 9. and 10. Autumn Calvilles (*malus fructu magno, intenſè rubente, violæ odore*, TOURN. *Les Calvilles d'Automne*, QUINT.)

Theſe apples are large and long, turning leſs towards the eye; in ſhape they exactly reſemble each other, but the one of them is of a red colour all over, and the other of a white. The firſt has its ſubſtance of a red colour, even to the core. The fleſh of both is breaking, and of a pleaſant taſte, and charming flavour. Mr. Switzer has aſſerted, that the white is the beſt.

The trees of both kinds bear rather delicate in Scotland, yet they bear tolerably.

Grey Leadington Lady—

N°. 11. Grey Leadington is of a middling ſize, a longiſh ſhape, that turns ſmaller towards the eye. The colour of the true kind is a dark green or grey: they are often freckled; the fleſh is firm, melting, juicy, ſweet, and agreeably perfumed: the ſmell is delightful. The pippins are placed in the center in very large cells. This apple is truly good, ſuperior to every other apple, if we except the golden-pippin and golden-rennet; nor is it excelled by either of theſe kinds.

The tree is hardy, grows regularly, and bears tolerably well. It will ſucceed in every manner, whether you plant it as a ſtandard or half-ſtandard, on a wall, as a dwarf or eſpalier.

N°. 12. Carpandy (*Le Carpandu*, QUINT.) is of a good size and fine shape; of a grey or dark red on one side, but a bright red on the other: the flesh is delicate, its juice very sweet, and of an agreeable flavour. When it turns wrinkled, it is good for nothing; for it loses its flavour before it begins to be wrinkled. This name is given to a fruit in Scotland, which is far inferior in goodness to the French kind.

The tree thrives and bears tolerably well.

N°. 13. Apius's apple (*malus fructu splendide purpureo*, TOURN. *L'Api*, QUINT.) is easily known by a lively red colour all over its surface, a thin and delicate skin: its pulp is soft, its juice sweet and agreeably perfumed. This is a charming little apple.

The tree is beautiful, and a great bearer.

N°. 14. Golden-rennet justly merits the preference to the grey and white rennets, tho' both are good apples. It is of a middling size, roundish, but rather long, somewhat flat at each end, with the eye and stalk a little depressed. Its colour, when ripe, is a dark yellow, with a little russet, or very dark red on the sunny side: its flesh,

tho' firm, is melting, its juice deliciouſly ſweet, and of a fine flavour.

The wood of the tree is ſtrong, it grows regularly, and bears well.

N°. 15. Golden-pippins are ſmall, nearly round; ſome of them are longiſh; the eye and ſtalk are little depreſſed. They are of a beautiful yellow colour, and ſpotted; their fleſh is firm, but melting, not very juicy: their taſte is an agreeable mixture of ſweet and ſour, joined to a rich flavour.

The tree grows regularly, and where it thrives is very beautiful, but is apt to die down every ſpring in part, where the ſituation is cold. Notwithſtanding which, it is generally a good bearer: it does excellently on a paradiſe-ſtock, whether planted on a wall, as a dwarf or eſpalier.

N°. 16. Winter Pear-Mains (*malus fructu ſeſſili, rubro, ſaccharato, ſuaviſſimo*, TOURN. *Les Drue Permeins d'Angleterre*, QUIN.) are of a middling ſize, nearly round, only a little depreſſed towards the eye and ſtalk at each end: their coat is ruſſet-yellow when ripe, and of a red colour towards the ſun; their ſubſtance is tender; their juice is of a vinous briſkneſs, joined to a very agreeable mixture of acid and ſweet. This delicious

licious fruit was ripe the end of October 1762.

The tree thrives well, and bears well.

N°. 17. Royal Pear-Main exactly reſembles the above in ſhape, ſize, and colour, nor does it differ much in its qualities. It ripened the beginning of November 1762.

The tree is delicate, and apt to be killed in part, whenever the ſpring is cold; yet it bears well.

N° 18. Non-pareille is a pretty large apple, round, except the depreſſion of the ſtalk and eye. Its colour is a ruſſet-red towards the ſun, and a dark yellow on the other ſide: the fleſh is firm and melting; the taſte is briſk, and very pleaſant. It is in eating for ſeveral of the winter months, and all the ſpring months; nay, if it is carefully kept, for ſome of the ſummer months. The tree deſerves the ſame character that has been given N° 15. when treating of the golden-pippin.

N°. 19. Naked apple is a beautiful fruit, broad towards the ſtalk, which is ſomewhat depreſſed, and turns narrower to the eye, which is placed on its crown; that is, a little flattened. Its colour is yellow, its

flesh is breaking and tender, and its juice is very pleasant to the taste. It may be eaten from the beginning of December to the month of May.

The tree in spring is late of protruding its foliage and blossoms, which gives it a good chance for bearing in many bad seasons, when the early flowers of the other kinds have been destroyed by the severity of the cold. The wood-branches of the tree are small; it grows regularly, and makes a fine appearance in every shape in the fruit-garden. The tree is hardy, and generally bears well.

N°. 20. Salmon apple is a fruit of a middling size, thickest not far from the stalk, to the depression of which it is gradually rounded off: it turns smaller to the top, and flattens to the eye. It is of a bright red colour on the one side, which fades into a yellow on the other. The substance is breaking and tender, and the juice of a brisk and agreeable taste. This fruit is in eating in December, and continues good for many months.

The tree grows regularly, and is generally a good bearer.

To the preceding numbers might be added

added many other very good kinds of apples; but from the above kinds may be ſelected a ſufficient collection for the fruit-garden, unleſs it is very extenſive; and we ſhall give a particular liſt for orchards by itſelf; many of which may be occaſionally admitted into very large plans: only permit us here to inform the reader, that in Clydeſdale the following apples may be had, and are much commended by ſeveral planters: Lady-apple, ſugar-loaf, ſummer-eli, ſummer leadington, ſtoup-leadington, marrow, courpendu, (very different from the one deſcribed) cole-houſe, ſtrawberry, commiſſary-pippin, Hamilton-pippin, ruſſets, Aclemy-ruſſet, golden-ruſſeting, white apple of Moncrief, green-cluſter, Garen apple, Carſe of Gowrie, Queen of England, winter eli, winter pippin, Fullwood, and many others too tedious to be made mention of. It is now proper to treat of quinces, for the ſake of ſuch planters as are fond of variety; nor is this fruit without its merit; but here we muſt have recourſe to the experience of others, as we have but few opportunities of examining any variety of quinces.

CHAP. X.

Of Quinces.

IT is highly probable, that this fruit was in high eſteem among the ancients, conſidering that it was dedicated to Venus, the Goddeſs of Love; and hence perhaps aroſe the cuſtom of lovers preſenting it to their miſtreſſes. Virgil, in his third Eclogue, which is written in imitation of Theocritus, ſays,

Aurea mala decem miſi: cras altera mittam.

It makes no ſmall figure in the verſes of the Grecian and Roman poets. The writers on Agriculture of both nations have taken notice of this fruit, and made mention of ſeveral of the kinds of quinces that they poſſeſſed. Pliny has aſſerted, that it was firſt brought to Italy from the iſland of Crete; and Serenus Sammonicus had poſſibly this aſſertion of Pliny's in mind, when he ſays,

Autque poma Cydon Cretæis miſit ab oris.

The kinds of quinces that are to be found

found made mention of in Pliny's works, are more diſtinctly marked than any other kinds of fruit of which he has treated. His firſt kind is, *Chryſomela inciſuris diſtincta*. This is ſaid by the critics to be the golden apples, *aurea mala*, of Virgil, and ſeveral other ancient poets. It is more than probable, that this is the Portugal apple-quince of the nurſerymen at preſent. His ſecond kind is, *Noſtracia odoris præſtantiſſimi*. This criterion will undoubtedly diſtinguiſh the kind; and yet not a ſingle author that we know of, has taken notice of this property in any of the quinces that are cultivated in Europe. We would gladly decide this matter, but we acknowledge ourſelves unable, as we have only ſeen a few kinds of quinces; ſo we leave it to be determined by the teſtimony of ſuch noſes as are not ſpoiled with ſnuffing among the curious in fruit. The third kind he calls *Struthea*, and informs us, that it is ſmall and late. The fourth, *Muſtea*, is an early kind. The fifth, *Mulvinum*, is covered with down, and the only kind that is eaten raw. The ſixth is a ſmall kind that grows in the hedges, and ſmells ſtrong. See PLIN. *Oper. Harduin.* vol. i. p. 738.

Quince-trees can only ſucceed in rich ſoils, and low warm ſituations, and ſeldom turn out to great account in Scotland, tho' we have ſeen them thrive and bear well in Holland, particularly when they were planted on the verges of ditches that were filled with mud and filth. It is not to be doubted, but that they will proſper, and bear on a well aſpected wall in Scotland, tho' they thrive but poorly in the open air, and bear very indifferently. Budding and grafting of them makes the trees bear ſooner and better, according to ſome authors, tho' this is ſeldom practiſed. The following kinds are to be met with in the nurſeries; but as I have not ſtudied the fruit, I ſhall give the kinds and their characters from Mr. Switzer, who was no bad judge of fruit. See *Fruit-Gardener*, page 197.

N°. 1. is the Portugal apple-quince. It is ſo called from its ſhape, and the likeneſs of the fruit to an apple. This is the beſt of any of the quinces, being a large yellow fruit, tender, pleaſant, and ſoon boiled.

N°. 2. is the Portugal pear-quince; it is denominated from the reſemblance in ſhape to a pear: it is little inferior in goodneſs to the other.

N°. 3.

N°. 3. The Barbary quince is good, but ſmall.

N°. 4. The Lyons quince is large, of a yellow colour, and good.

N°. 5. The Brunſwiek quince is large and white, but it is inferior in goodneſs to the Portugal kinds.

N°. 6. The Engliſh quince is downy all over its ſurface, is often ſtony in its ſubſtance, and is not comparable to the other in goodneſs.

The ancients were fond of quinces; they believed them healthſome, eat them raw, ſtewed, and preſerved. At preſent they are moſtly uſed in tarts made into marmalade, or preſerved with ſugar. The natural taſte of them is agreeable to few palates, ſo that they are almoſt only to be found among the curious, who delight in collecting variety of kinds in fruit; and while the trees ſucceed ſo ill in our climate when they are planted in the open air, they are not likely to become general, eſpecially conſidering that we have ſo many better kinds of fruit that claim all the room which we have to ſpare on our walls.

CHAP.

CHAP. XI.

Of Medlars.

THIS fruit was well known in Greece in the time of Theophraſtus; for he has made mention of ſeveral kinds. It is the *Meſpilus* of Pliny, who has taken notice of three different kinds: firſt, *Anthedon*: ſecond, *Setania*: third, *Galicum*. The firſt was probably the Dutch medlar, the ſecond the Neapolitan, and the third the common medlar. Several of the botaniſts, and particularly Sir Charles Linnæus, have enumerated many ſpecies of this fruit; but I propoſe only to make mention of ſuch kinds as are planted for the ſake of the fruit.

Should the reader turn to the article *Meſpilus* in the laſt edition of Mr. Miller's Dictionary, he will find every kind ranged according to the botaniſts. Thus forgetful of his plan, and diſregarding his title of Gardener's Dictionary, he has attempted a Botanical Dictionary joined to the former; by means of which he has confounded both, and ſhewn little judgment in either. He ought to have conſidered, that

that horticulture and botany are entirely different; and that the planters have other things in view than ſtudying a ſcience; the terms of which, as it has been reformed by Sir Charles, require great ſtudy and application, and more time perhaps than many gentlemen can ſpare, or chuſe to beſtow. The learned Linnæus had in view the conſtituting ſuch genus's and ſpecies, as were found by him to be produced invariably in nature. Varieties, as they are believed to be accidental, made no part of his ſtudy; yet theſe are the proper object of the planter's care, while he ardently purſues the knowledge of fruit, and ought to have been the ſole ſtudy of Mr. Miller, who had undertaken to inſtruct him. A country gentleman inclined to plant ſome of the beſt kinds of medlars for the ſake of the fruit, turned to Mr. Miller's Dictionary; but unable to ſelect them from the farrago there given, he peruſed the article, and exclaimed, "The deuce take the fellow! Does he pretend to make hawthorns paſs with honeſt people for medlars? No, no, the cheat is too apparent; let him keep theſe for his hedges, with a plague on him."

Medlars will thrive in the open air in

ſeveral

several places in Scotland the trees grow vigorously, and bear tolerably in good seasons. As the trees arrive at no extraordinary height, some of them may be planted to advantage in the fruit-garden, where they may help to form an agreeable variety. The fruit of the medlar tree must be kept for some time before they are fit for being eaten; for, according to the poet, they are only delicious in decay. I shall present my reader with three different kinds, that are easily distinguishable from each, both by the appearance of the trees and of the fruit.

N°. 1. The Great Dutch medlar. Its fruit are the largest and best of any.

The tree grows vigorously, tho' irregularly, and is generally a good bearer. It has no thorns on the branches.

N°. 2. Common medlar has thorns on the branches: the fruit, tho' smaller than the former, are good.

This tree grows more regularly than the preceding, and will make either a handsome standard, half-standard, or dwarf.

N°. 3. Neapolitan medlar, or Azerole. This kind came from Italy to Britain. The fruit looks well, and are pleasant to some tastes.

The

The tree will thrive in the open air in warm ſituations, and makes a handſome appearance. All of the above kinds may be grafted on white thorns, or pear-ſtocks, and trained to any of the purpoſes that the planter ſhall incline.

We ſhould be wanting in the reſpect due to the ancients, and to Mr. Tournefort, if we paſſed over in ſilence a kind of fruit which conſtitutes a particular genus in both. This is the ſervice-tree, the *Sorbus* of the Latins. Theophraſtus informs us, that the people of Attica poſſeſſed two kinds; and Pliny has made mention of four kinds, and diſtinguiſhed them by ſufficient marks: the firſt with round fruit; the ſecond with pear-ſhaped fruit; the third, with oval fruit; and the fourth he calls *Terminalis*, from its ſuppoſed virtues of curing colics, or gripes in the belly. The three ſpecies that are firſt named, are to be found in Tournefort's Inſtitutions, under the name of *Sorbus*; the laſt kind under that of *Crategus*. The fruit of the ſervice-tree is to be treated as medlars; for like them, they are not eatable till putrid.

It

It is not to be doubted, but that the different kinds of ſervice-trees will thrive and bear in many places of Scotland, tho' of the care and culture that is required for managing them, we can ſay little from our own experience.

Many kinds of theſe fruit-trees may be had from the nurſerymen in London. I ſhall deſcribe one kind of ſervice from Mr. Switzer. The Pyramidal ſervice-tree produces its fruit on the ſides of the branches next the ſun, [this is probably a miſtake] the fruit are of a dark red colour, pretty large, and eat as pleaſantly in October as any medlar. We now proceed to treat of a much better kind of fruit, when it grows in ſuitable climes.

CHAP.

CHAP. XII.

Of Fig-Trees.

BEFORE we come to treat of nuts, it is proper to give ſome account of this fruit, which cannot be ranged with any kind of propriety under any of the claſſes that has been conſtituted. Fig-trees on walls and in caſes we have frequently ſeen in Scoland, and on theſe fruit; but we never ſaw any of the fruit in perfection in this country; that is, good and ripe: and had Africa produced no figs better than ours, in vain had the great Cato ſhewn them in the ſenate at Rome, the Third Punic war never had been begun, nor Carthage deſtroyed. See PLIN. *Opera Harduini*, vol. i. page 745.

Mr. Quintinye prefers this fruit to every kind of tree-fruit whatever, and commends in a particular manner the round white fig, and the long white fig, as the kinds that are ſureſt of ſucceeding in France, or rather about Paris. Should any gentleman in Scotland incline to make trial of a few

fig-trees on well aſpected walls, the trees will certainly thrive and bear, tho' the figs do not acquire maturity. From the well known candour and accuracy of Mr. Quintinye, we may reaſonably conclude, that the above kinds of fig-trees have as good a chance of ſucceeding as any other in this variable climate of ours. Making uſe of mats, &c. to preſerve the trees and fruit from cold, whenever the weather is ſevere, will prove very uſeful for the preſervation of both. However, as I have reaſon to believe, that the ſucceſs of a plantation of fig-trees is very doubtful, even in the luckieſt ſituations, I diſmiſs this fruit, as I only aim at conveying uſeful inſtructions to the really curious planters.

CHAP.

CHAP. XIII.

Of the third Claſs, or of Nut-Bearing Trees in general, and of Almonds in particular.

THE eatable part of all theſe fruits is contained within a ſhell, or hard cover: it is very different from both the claſſes of fruit that have been deſcribed; for in both of them, we conſume the pulp that ſurrounds the plantules contained in their proper coverings; whereas, in this claſs, it is the included plantule which we eat, and for the ſake of which we raiſe and plant the trees.

The fruits of this claſs are not numerous in Scotland; there are only almonds, walnuts, cheſnuts, and hazelnuts.

Almond-tree. *Amygdalus.* I have ſeen a very large tree of this kind in a vigorous ſtate, growing in the open air in Scotland, and loaded with many fine fruit. But the ſituation was uncommonly favourable, being low and warm, and entirely ſhel-

tered from north and eaſt winds. But this fruit is ſo good when dry, and purchaſed at ſuch an eaſy rate, that I imagine it is labour loſt to plant any of them. However, ſhould the curious planter inſiſt on having ſome almond-trees for the ſake of variety, they may be furniſhed by the nurſerymen with three or four different kinds; and by planting and training them on a wall, as has been directed for peach-trees, I don't doubt but that they will ſucceed very well, and bear tolerably in low warm ſituations, where they are ſkreened from the injurious particles of cold.

CHAP.

CHAP. XIV.

Of Walnut and Cheſnut Trees, with the Fruit.

JUGLANS of the Latins, or the walnut-tree, deſerves the planter's care on a double account, as well for the timber as the fruit. This tree is often to be met with in Scotland, both in gardens and orchards; tho' I would baniſh it from both, and diſpoſe of it in the ſame manner as of foreſt-trees. It ſucceeds excellently when planted in ſingle rows, as may be ſeen at Inverara, a country-ſeat of his Grace the Duke of Argyle, in the Highlands of Scotland.

While the trees are young, they are generally froſt-bit by the ſevere cold of ſpring. This ſeldom fails to kill the extremities of the branches for ſome way down, after which a lateral bud ſprings from the ſound part below, and becomes the ſtem: hence the reaſon of the crookedneſs of the tree, which Mr. Switzer,

without attending to the cauſe, has propoſed to remedy, by tying the new ſhoots to ſtraight ſticks thruſt into the ground at the ſide of the tree; a method which muſt prove both troubleſome and ineffectual. As moſt of the trees are raiſed from the ſeed, there is an almoſt endleſs variety of the fruit in ſhape, ſize, and colour, &c. which has afforded an opportunity of impoſing on the ignorant ſuch a multiplicity of kinds, that I have ſeen a catalogue of walnuts ſent to a curious planter from America, that contained above five-and-twenty different ſpecies; I ſhould rather have ſaid different names.

When this tree has grown for a number of years, it becomes much hardier, and reſiſts the ſevereſt colds in ſuch ſituations as are tolerably ſheltered; there they bear plentifully, and in good ſeaſons the fruit acquire perfect maturity. Walnuts are moſt healthſome when green; for then they can be freed from the ſkin that covers them, which it is not eaſy to ſeparate, if the fruit are once dried, in which ſtate they are imported from abroad. The ſkin or cover of the fruit is a bitter aſtringent,

and apt to occaſion pains of the throat to thoſe that eat them.

The beſt way of raiſing walnut-trees is to plant the largeſt fruit you can get in the places where they are to remain; keep the young trees free from weeds about the ſtem for a few years, or till they over-top the weeds, and then they may be left to ſhift for themſelves.

It is generally alledged, that walnut-trees ſucceed but indifferently after being tranſplanted. However, ſhould any planter incline to give them a place in the fruit-garden or orchard, they may have their branches divided by pruning, and be trained in like manner as fruit-trees, till the ſhape is conformed to the place of his plan that they occupy. After all, I am afraid that the fruit of the walnut-tree will be precarious in moſt places of Scotland.

I have ſeen them planted alternately with fruit-trees for ſeveral acres of an orchard, as alſo in kitchen grounds, neither of which practices deſerve to be imitated, for reaſons that will prove too obvious to the intelligent to need to be made mention of.

The cheſnut-tree may be raiſed for the ſake of the timber, or planted for the ſake of variety among foreſt-trees; but we need never reckon on the fruit, as not even the beſt ſeaſons bring them to any tolerable perfection in Scotland. Where it grows in a low, ſheltered, warm ſituation, it makes a fine tree.

CHAP. XV.

Of Hazel-Nuts.

IN order that the planter may have it in his power to treat his friends with all kinds of fruit that are to be found in Scotland, I have added this chapter with a view to inform him, that by the induſtry of the gardeners, we may poſſeſs a variety of hazel-nuts, ſome of which are eſteemed to be good kinds of fruit. The largeſt kind is called philberts, and the kernels are reckoned delicious when eaten green. There are two other kinds of hazel-nuts, that are ſmaller in ſize than the philberts: the ſhell of the one is of a red colour; that of the other is of a white. We are told, that

that the beſt kinds of theſe trees are ſuch as have been grafted in Holland. This is one of thoſe prejudices that are without any foundation; for trees grafted from the kinds that were originally procured in Holland, muſt be equally good with thoſe that were imported.

The philbert-trees are not very beautiful: they are very hardy, tho' they bear but indifferently. All of the kinds ought to be carefully freed from ſuckers; if theſe are neglected but for a ſhort time, you will have thick buſhes inſtead of trees.

The fruit of the philberts, in my opinion, are not preferable to the hazel-nuts that are commonly gathered in the woods.

CHAP.

CHAP. XVI.

Of Mulberries.

WE ſhall begin with theſe, being the firſt article of the fourth claſs, which we have denominated ſmall fruit. Mulberry-trees have been cultivated by anciencients and moderns of almoſt every country, where they could or can ſucceed. The trees are very neceſſary to all ſuch as breed ſilk-worms; but we only mean, in this place, to conſider them as fruit-trees. Pliny ſays, that the unfolding of their leaves in the beginning of ſummer, is a proof of the cold weather being over; and from his works has this miſtake been copied by almoſt every writer on botany and gardening ſince his time. The truth of the matter is, a cold ſeaſon retards their appearance; but we have often very pinching injurious weather after their foliage is fairly expanded.

We can procure from the nurſerymen three kinds of mulberry-trees, diſtinguiſhed by the colours of their fruit, which are black, red, and white. Mulberries

berries ripen very well in good ſeaſons in Scotland, when the trees are planted on a wall in good aſpects, or in warm ſituations even in the open air.

The black mulberry is a good bearer, after it has grown to five or ſix feet high; but the white ſeldom bears till the tree is old: it makes the handſomeſt tree of any of the kinds. We can ſay little of the red, as it is not often to be met with.

All the kinds may be raiſed from ſeed by ſuckers, which the trees ſend off in plenty; or by layers, which readily take root: they may alſo be grafted on each other by approach, which promotes their bearing. A light rich ſoil, a warm ſituation, and good aſpect, is neceſſary for the ſucceeding of theſe trees; and ſhould the curious planter incline to make trial of a greater variety of them than what we have made mention of, he may procure ſeveral other kinds; which, tho' natives of Virginia, yet thrive in our ſoil and climate.

The feeding and rearing of ſilk-worms by the leaves of theſe trees, is an agreeable amuſement to ſuch as are fond of natural hiſtory.

CHAP.

CHAP. XVII.

Of Gooſeberries.

THESE fruit are generally known in Scotland, and are agreeable to almoſt every taſte: they are, beſides, very healthſome when ripe; but as for the unripe fruit, as they are commonly made into tarts, they deſerve no ſuch character. I ſhall deſcribe only a few kinds, which I take to be the beſt; and as they make their appearance in ſucceſſion, ſo the planter may enjoy one or other of theſe kinds for many weeks. Beſides thoſe, I intend to deſcribe many other varieties or kinds of gooſeberries that are commonly cultivated.

N°. 1. Green gaſkins are the earlieſt of any. They are large and ſmooth, of a delicious ſweet taſte, and an agreeable flavour: the buſh has few prickles, and is a conſtant and good bearer.

N°. 2. Nutmeg gooſeberry is large, ſhaped like a nutmeg, of a dark red colour when ripe: the ſkin is ſmooth, and the juice is very agreeable to the taſte. The buſh

buſh has not a great deal of prickles, and is a tolerable bearer.

N°. 3. The yellow gooſeberry is not ſo large as either of the above; it is round and ſmooth; when ripe, its juice is exceedingly ſweet, and very pleaſant. The buſh is eaſily trained, it grows regularly, makes a beautiful appearance, and is a conſtant and great bearer.

N°. 4. White gooſeberry is very large and ſmooth, it is very juicy, and its taſte not unpleaſant. The buſh grows regularly, and is a good bearer.

N°. 5. The rough round red gooſeberry is the commoneſt of any: its juice is of a pleaſant acid taſte. The buſh grows irregularly, and the branches have frequent prickles on them: it is a good bearer.

N°. 6. The ſmooth red gooſeberry is ſomewhat ſweeter in its taſte than the rough-red, and the buſh is not ſo prickly, neither is it ſo good a bearer.

N°. 7. The bottle-gooſeberry is a black or dark-red berry, of a long form, ſmooth, and almoſt tranſparent. Its juice is different in taſte from that of any of the above, and is very agreeable. The buſh produces

but

but few branches, the prickles are rare: it is a bad bearer.

N°. 8. The rough, or rather downy yellow gooſeberry, which is very late of ripening, in good ſeaſons is a tolerable fruit, but in bad ſeaſons is watery and ſour, or inſipid. The buſh is dwarfiſh, has many prickles, and is a great bearer.

Method of propagating Gooſeberries.

The beſt method of propagating any of the above kinds, is to make choice of a bearing branch with a long ſtraight ſtem; cut it off ſloping from the buſh, and thruſt in the cut end five or ſix inches into the ſoil, on a north aſpected border. This may be done any time in the end of September, in the month of October, or even till the beginning of April. Cover the ground about your cuttings with litter or dung; and water them next ſpring and ſummer, if the weather is very dry. Such of them as have grown vigorouſly the firſt year, may be ſafely tranſplanted in autumn. But ſuch as have thriven but indifferently, you may let ſtand another year, and then they will be provided with good roots, and ſucceed ſurely when planted.

In

In training of them, keep your buſh to a ſingle ſtem, for a foot and an half, or two foot high from the ſurface of the ground: leave only a few regular branches at equal diſtances on its head. If vigorous ſhoots make their appearance when the tree is young, and are ill placed, break them off from the tree; which is eaſily done, by pulling them in a direction from the branches, or ſtem, where they take their riſe. If, on the contrary, they are well placed, and can contribute to forming a well-ſhaped head, encourage them. Be ſure always to keep the heads of your buſhes ſo thin, that the branches do not cover or croſs one another. Shorten none of the branches, unleſs when they ſtraggle too far, or hang down their extremities. The manner of clipping their heads with a pair of hedge ſciſſars, which I have ſeen put in practice, renders their heads too full of wood; the fruit become ſmall, and are gathered with difficulty; whereas, when the buſhes are trained as I have directed, they look handſome, bear plentifully, and the fruit are large and well taſted; they are alſo gathered with eaſe.

The

The borders on which gooſeberries are planted, ſhould be laboured after the ſame manner as has been directed for the borders of fruit-trees; and dunging them once in two years, will make the buſhes grow vigorouſly, and render the fruit much larger.

If any planter is fond of raiſing new varieties of this fruit, they may be obtained by ſowing the ſeeds and rearing the plants till they come to bear, when every buſh will produce a new kind of gooſeberry; I do not ſay a good kind.

CHAP. XVIII.

Of Currants.

IF we credit Mr. Anderſon on Commerce, they were firſt planted in England in the year 1533; but this is probably a miſtake. The juice of the currant, tho' it is acid, yet is very pleaſant, cooling, and refreſhing, proper for allaying thirſt; and both its taſte and flavour are excellently preſerved in jellies. Of theſe fruit we have four different kinds, all of which

which deſerve to be planted on account of their good qualities. They are the large white currant, the red currant, the yellow currant, and the black currant. The black are preferred by ſeveral perſons to the three preceding kinds, as they believe that they are more healthſome. Their juice has indeed more ſweetneſs, and leſs acidity. All of them are to be propagated, planted, and treated as gooſeberries.

The accelerating and retarding the currants ſeems to be of no uſe, as they can be kept through the whole year, either preſerved, or in jellies. The fruit of all the kinds grow much larger when the buſhes are planted on walls.

Many other kinds or varieties of this fruit may be procured, but they reſemble one another very near in the taſte; and tho' the buſhes or fruit may vary in ſome things, yet they are not worth the multiplying.

CHAP. XIX.

Of Raſpberries.

THERE are three kinds of this fruit to be met with in Scotland: they are only diſtinguiſhable by the colours of the fruit, which are red, white, and yellow. They are all much alike in goodneſs; their juice is ſweet and agreeable, by a peculiar flavour which they poſſeſs: by adding ſome of their juice to that of currants, in making jelly, it heightens the flavour of the currant-jelly, and renders it pleaſanter to moſt people's taſte.

The buſhes ſhould be planted at ſuch a diſtance from one another, that the ground may be eaſily delved, or dunged between the rows; and only a ſingle plant ſhould be permitted to ſpring up from a particular root. The buſh produces its wood in one year to the proper height, and bears fruit the next year, after which it dies down near to the root; ſo that there is always in ſummer and autumn a young ſhoot of wood along with the bearing buſh. And whenever the fruit are gathered, the

old ſhoot ſhould be broken off, or cut down near to the ſurface of the ground, and only one of the young ſhoots left for bearing fruit the ſucceeding year. By this management, and keeping the ground clean between the rows, the fruit will be large and good, provided the plantation is made on a north aſpect.

CHAP. XX.

Of Strawberries.

THE planter will find in Scotland five different kinds of this excellent fruit. The low creeping buſhes that produce four of the kinds, are very hardy, and will proſper and bear in almoſt every ſoil and ſituation, if they are properly planted and managed. At the ſame time, it is certain, that the richer the glebe, and the warmer the aſpect, the earlier, larger, and better will the fruit be. As this fruit is agreeable to all taſtes, I ſhall deſcribe each of the kinds particularly, and add ſome uſeful obſervations to direct ſuch gentlemen as may poſſibly have attended but little to the ſubject.

N°. 1 is the red wood ſtrawberry. The ſmall plants of this kind are to be found in great plenty in the woods, generally on dry ground, where they bear without any culture. They thrive very well when tranſplanted into the garden, and bear tolerably. They are the earlieſt ripe of any of the kinds: they grow pretty large, and become flat on the oppoſite ſides, and pointed, as they approach maturity; and when they have acquired this, they are of a dark red colour: their ſubſtance is melting, and their juice has an agreeable ſweetneſs, joined to a good deal of acidity.

N°. 2 is the Virginian ſtrawberry. They are of a light red colour when ripe, if they were expoſed to the ſun; but of a pale red or white colour, if they grew in the ſhade. Their ſhape is nearly round, except where they are joined to the foot-ſtalk: they are large and juicy, of a fine flavour, and delicious taſte. The buſhes of this kind are eaſily known by their large, ſmooth, ſhining leaves; they are great bearers, and in ſuch general eſteem, that they are every where to be met with.

N°. 3 is the white wood ſtrawberry. They are round, of a good flavour, and

pleaſant ſharp taſte: they begin to ripen ſoon after the Virginian, and continue to yield ripe fruit to the middle of September, or later: when the ſeaſon is favourable, you may gather ripe fruit from them till the month of November. They afford but few fruit at a time, but produce many through the ſeaſon: their firſt fruit are the ſweeteſt; for as the year advances, the acid becomes more copious, and their juice more watery and inſipid.

N°. 4 is the Polonian, or Haut-boy. It is by ſome people called the Burgundy ſtrawberry. This is a larger fruit than any that have yet been deſcribed: it is generally ſhaped like number 1, of a purple colour when ripe: its juice is ſweet, and of a moſt delicious vinous taſte, and charming flavour. Its fruit are raiſed on a high ſtem above the rough leaves. When they approach maturity, they ſhould be tied to ſticks to ſupport them, for they turn heavy and fall down, and are either eaten or ſlimed by ſnails, or both; or they are ſpoiled by the ſoil, become mouldy, and rot.

N° 5 is the Chili ſtrawberry. The uncommon ſize of the fruit would recom-

mend this ſtrawberry, did not the barenneſs of the plant, and indifference of the fruit in Scotland, render it little eſteemed.

Method of raising ſtrawberries.

Strawberries ſhould have a rich good ſoil, and the buſhes be planted in rows two feet diſtance from each other: the plants may be placed at one foot diſtance in the rows: the ground ſhould be frequently laboured, and the richeſt manures, ſuch as ſheeps-dung, aſhes, &c. ſhould be laid on the ground in autumn, after the crop has been gathered, and the young plants pulled up and taken off: this ought to be delved down early next ſpring. Let the ground be conſtantly kept free from weeds, and ſuffer only one or two buſhes to grow on the ſame ſpot, keeping them always clear from runners. If you incline to have large fine fruit, reduce thoſe that are found on the ſtems, to a ſmall number ſoon after they are ſet, and pull off late flowers whenever they appear. By this management hautboys will become very large and fine; nor is it eaſy to conceive any thing more delicious than this fruit is, where they are perfectly ripened; for in richneſs of taſte, not even pine-apples can contend with them.

Having

Having now finiſhed what I had to offer on fruit-trees, &c. it ſeems proper to add one chapter more on the method of knowing when particular kinds of fruit are ripe, the gathering them, and the beſt manner of preſerving ſuch kinds till they become ripe, as acquire maturity after they are taken from the trees. This, I am apt to believe, may prove of ſome utility; as ſeveral planters, tho' they have a regiſter of the kinds of their fruit-trees, yet are but little verſed in the nature of the fruit-trees, or the times of their ripening. I have known ſome people, from their ignorance of the above articles, condemn fruit-trees of very good kinds, becauſe they had conſumed the fruit, while they were yet crude and immature; whereas, had they known the proper marks of ripeneſs, and preſerved their fruit till they appeared, they would have been well pleaſed with the kinds, and carefully cultivated their trees, inſtead of rooting them out, which they did. Unripe fruit, even of the beſt kinds, are unpleaſant.

CHAP. XXI.

Of the Marks of Ripeneſs; with the Manner of Gathering and Preſerving Fruit.

IT may be obſerved, that all ſummer fruit, of whatever kinds, ought to hang on the trees, or continue on the buſhes, till they are perfectly ripe: for ſhould the planter take them from the trees, &c. before maturity, in hopes that they will ripen afterwards, he will deceive himſelf; for they will neither acquire the proper flavour, nor the agreeable taſte of ſuch as ripen on the trees, &c.

SECT. I. It may likewiſe be taken notice of, that the ſtate of maturity in which the early kinds of fruit are in perfection, is of very ſhort duration. In ſome kinds, it is confined to a ſingle day: in others, perhaps, to a couple of days; and in few kinds is it extended beyond three or four days. The above obſervation is equally true, whether the fruit are permitted to hang on the trees, or are carefully taken off, and laid up in the conſervatory. Not but that they may be uſed for a longer

longer ſpace of time; but how ſenſible are we of the loſs of taſte, and flavour, in all the fruits of this ſeaſon that are paſt their prime? How inſipid a faded cherry, that has loſt its colour! How taſteleſs a ſhrivelled plum, or meally pear? How ſoon do the early peaches exhale their delightful flavour, and loſe their briſk taſtes! Strawberries perfume the air when thoroughly ripened, and along with this, are deprived of their reliſh. Gooſeberries ſoon wallow and fade, by which their taſte is ſpoiled.

SECT. II. Nature having prepared a charming entertainment for us in the ſummer fruits, ſhe exhibits them in a very agreeable manner, and tempts us to conſume them without loſs of time; but if we delay to embrace the offer, ſhe conſigns then to corruption, part of their ſubſtance is diſſipated thro' the atmoſphere, and the reſt conſigned to the ſoil, where it becomes ſubſervient to her various purpoſes, in nouriſhing of vegetables, &c. But that the planter may be able to diſcern when each kind of fruit is for his uſe, we ſhall begin with ſtone-fruit, the earlieſt of which are cherries: but as it would

would prove tedious, tho' inſtructive, to give the marks of maturity in every particular kind of fruit, ſo all that is here propoſed is only to give ſome general obſervations, and ſometimes to point out their utility, in particular inſtances.

SECT. III. Tho' the May cherry is of ſmall account, yet the colour and ſize will greatly aſſiſt us in knowing when this and the different kinds of cherries are ripe.

The dark red colour and heart-ſhape of the May duke cherries, are certain ſigns of maturity; and if they are permitted to hang long on the trees after theſe appear, they loſe their flavour and taſte; firſt turning mouldy, and afterwards rotting.

The ſeveral colours in heart cherries ſhould be particularly ſtudied, and the times of their ripening noted down; for all of them are ſo delicious, that it is well worth while to watch their maturity, that they may be eaten in perfection. A ſhining of their ſkins is no deceitful token of maturity, and is to be obſerved in the black, as well as the red and white: the laſt named kind, when ripe, looks as if it were tranſparent.

The

The red ſhining Kentiſh cherries, and black morella's, are certainly ripe. If we once know the proper ſize, the peculiar ſhape, and colour of any kind of cherry, we ſhall find but little difficulty to know when it is in its ſtate of perfection.

SECT. IV. The ſtate of maturity in many kinds of plums, is diſcoverable by the yellow colour of the ſkin, which all the white and green kinds acquire when ripe; as alſo by a kind of tranſparency, which becomes viſible in their ſubſtance, and a ſoftneſs that is ſenſibly felt by preſſing them gently near the pedicle or ſtalk.

The coloured kinds are known to be ripe, by the charming velvet of their ſkins, in ſuch as are naturally powdered: in others, we judge by the ſhining and yellow caſt of their ſkins, joined to the yielding of their ſubſtance, in the manner that has above been made mention of. Almoſt all of the kinds ſtick to the tree while ripe, tho' they eaſily yeld to any impulſe, and quit it when gently pulled, or when the tree is ſhaken. In taking plums from the trees, they ought to be gently handled; for when bruiſed, they ſoon become a prey

to

to corruption, and rubbing off the powder ſpoils the beauty of their appearance. It is not eaſy to paint, even in imagination, any thing more beautiful than ſome kinds of plums; or conceive any thing more delicious than others.

SECT. V. Some kinds of peaches, when full ripe, have a very pleaſing ſmell. Moſt of them fall from the tree; and their ripeneſs is diſcoverable by the ſame ſigns that we have taken notice of in plums.

Nectarines and apricots may be known to be ripe, as plums and peaches.

Small fruit are ripe when they have acquired their proper ſize and colour, are ſoft and taſteful.

Strawberries are ſurely ripe, when they come clean from the foot-ſtalk, have a high flavour, are ſoft and mellow.

SECT. VI. Summer pears are known to be ripe by the yellow colour of their coats, the ſubſtance yielding to the impreſſion of the thumb, their falling from the trees, and the peculiar flavour of each kind when taſted. This, perhaps, will be better expreſſed by the word reliſh; but it ought to be attended to, that this quality in pears is variable, according to the ſeaſon.

ſeaſon. When the ſeaſon is warm and dry, the flavour is exalted; when it is wet and cold, the reliſh is ſo much debaſed, as to become ſometimes vapid. If we do not watch over ſummer pears, and conſume them when ripe, they grow meally, rot in the heart, or turn inſipid.

SECT. VII. Summer apples, beſides the marks of ripeneſs which they have in common with pears, emit a peculiarly agreeable ſmell, when in a ſtate of maturity. Both the above kinds of fruit, ſect. VI. and VII. fall from the trees when ripe, or are eaſily made to fall, by ſhaking the trees.

SECT. VIII. Autumnal pears and apples ſhould be permitted to hang on the trees till they are in a ſtate of maturity; but the early froſts that happen in the autumn, ſometimes tempt us to take the lateſt kinds from the trees before they are compleatly ripened; and yet we find in experience, that ſuch fruit acquire maturity, and become agreeable. In this, our dread of miſchief from froſt is, perhaps, imaginary; for, from what I have obſerved, I can aſſert on good grounds, that unleſs the froſt is very intenſe, it is incapable

ble of injuring fruit, ſo long as they hang on the trees. This claſs of fruit changing into yellow, turning ſoft, and ſome kinds feeling moiſt on the ſkin, are ſure ſigns of their being fit for eating; nor is it eaſy to ſay with how much pleaſure they are conſumed. The above marks admit a great variety; and the planter ſhould be acquainted with the degree that is proper to each. In vain will he expect to find the ſame degree of ſoftneſs in the pears that are naturally hard, as the ſaint John, &c. as in the Beurrie, late Scots cornuck, &c. The ſame holds true with regard to apples. The good pears of this ſeaſon perſiſt in a ſtate of ripeneſs for ſeveral days; nay, ſome of them, perhaps, for weeks before they turn meally, or rot: but in the times of their laſting, there is perhaps as great a variety as in the kinds.

SECT. IX. Autumnal apples, when ripe, look ſleek and plump, ſmell very agreeably, yield to the impreſſion of the thumb, and are pleaſant to the taſte. When they fade, or are in the decline, they look dry and wrinkled; or if they fall a prey to corruption, it commonly begins outwardly; ſo that it is eaſily diſcovered;

vered; and any ſpoiled apples ſhould be directly removed, leſt they infect their neighbours.

SECT. X. It is a common cuſtom to take winter pears and apples from the trees early, on account of bad weather, as ſevere froſts, &c. None of this claſs acquire maturity while they hang on the trees, but become ripe in lying by us, againſt a ſtated time, according to the appointment of the Author of nature. To favour their progreſs in ripening, the following cautions have been put in practice: To take them from the trees when dry; to lay them carefully in a heap, ſo as that none of them may be bruſed; then they place them in a warmer part of the conſervatory, and cover them cloſe to keep up their perſpiration; which confining the moiſture will effect. They ſhould continue in this ſtate for ſeveral days; for by means of this, they throw off the watery part of their juices, which brings them ſooner to their ſtate of perfection. After they have ſweated enough, they may be ſingly taken out, wiped dry with a clean cloth, and expoſed for a few days to a warm

warm dry air; then lay them carefully up in a close clean place, where moist air, fœtid or offensive particles can find no access to them. A pure air can never hurt fruit; but a moist one loaded with putrid particles, &c. may greatly injure them; for that they readily imbibe these, is evidently proved from the taste which some of the fruit acquire, and the sudden advances of putrefaction in others; for no sooner does an apple or pear begin to rot in a heap, but it infects its neighbours: hence the necessity appears, of carefully looking after your fruit, and timeously removing all such as are spoiled.

SECT. XI. Every planter should be acquainted with the precise time of ripening of every particular kind, that he may know when to look after them; in order that, with the least trouble, he may exactly discover the time when they are in a state of maturity.

Unluckily, directions for this cannot easily be given, as it admits of a great latitude, advancing in some places and circumstances, while it is retarded in others: the intelligent in nature will easily discover

ver what cauſes hurry on, and what impede the advances of ripeneſs; I need not point them out.

SECT. XII. It is obvious to every obſerver, that a warm ſeaſon forwards ripeneſs, and a cold one retards its progreſs. If the ſeaſon is dry as well as warm, its productions will prove very early: if it is moiſt as well as cold, they will be late. The various combinations or degrees of each will have their effect in the ratio of their intenſeneſs and duration; and the cauſes above ſpecified will act in every circumſtance and ſituation, as above: they are univerſal agents throughout all nature, to which every form is ſubjected.

SECT. XIII. But before we conclude this chapter, it ſeems proper to obſerve, that tho' we have conſidered ripeneſs as that particular ſtate in which fruit appeared to us to be in the higheſt perfection; that is, when they were moſt agreeable to our taſtes; yet it ought to be conſidered as a mere relative term; for every individual has an undoubted right to pleaſe his palate, and conſume his fruit in the ſtate that is moſt agreeable to him. For the ſake of every lover of fruit, we ſhall in general de-

ſcribe their progreſs, after they have acquired their proper ſize, till they arrive at what we have conſidered as their ſtate of ripeneſs; and then take notice of what changes they undergo in their decline, till they are deſtroyed by corruption.

SECT. XIV. All kinds of fruit, while unripe, are hard and ſour; but theſe qualities inſenſibly diſappear as they approach maturity; and in ſome kinds are almoſt entirely loſt in their ſtate of ripeneſs, when they are only a ſoft profuſion of ſweets. In this ſtate they continue but a ſhort while; after which they gradually loſe both taſte and flavour, and either turn putrid, or dry into rottenneſs. In other kinds the ſubſtance only turns breaking, and acquires a fine flavour and ſweet taſte in their higheſt perfection: theſe, when preſerved in a dry place, rather turn acid than putrid. A third kind mellows into ſoftneſs, tho' it ſtill retains no ſmall ſhare of the acid: the decline of theſe is ſimilar to that of the firſt. From the above, and ſeveral obſervations that have been occaſionally made, and confirmed in many inſtances, we would eſtabliſh the following maxims: That the proneneſs of any

fruit

fruit to putrefaction, in the ſtate of ripeneſs, is in the direct ratio of the copiouſneſs of its juice, and the ſoftneſs of its ſubſtance: That, on the contrary, the duration of any fruit, after it is ripe, is in an inverſe ratio to the above; that is, it will be in the direct ratio of the ſolidity and dryneſs of its ſubſtance. Many other maxims might be laid down, were we ſure that they would prove acceptable to our readers; but as this is doubtful, we ſhall rather endeavour to adapt our obſervations to their taſte; in doing of which, a writer ſeldom proves diſobliging to the reader.

SECT. XV. Is any perſon fond of fruit that have a firm ſubſtance and an acid taſte? let him conſume the ſoft ſweet kinds, while they are only beginning to advance to ripeneſs. Is he fond of the peculiar flavour and proper taſte of pears and apples, &c.? theſe are ſolely to be found in the ſtate of maturity. Does he prefer ſweetneſs to flavour, and ſoftneſs to firmneſs of ſubſtance? he may conſume his fruit when they are in the decline. The preceding directions will hold good in all kinds of fruit, tho' they

are only deſigned for ſuch fruit as make their appearance in the deſert: as to prepared fruit, fire and ſugar properly applied, will ſuit them to all taſtes.

SECT. XVI. Conſidering our ſeaſons in general, it will be prudent in unfavourable ſituations to plant few trees that bear late fruit. I have ſeen great blunders of this kind committed, where the proprietors had planted late kinds of French pears and apples; the conſequence was, that tho' the trees ſometimes bore, the fruit never ripened.

SECT. XVII. It will poſſibly be objected againſt the preceding Treatiſe, that the liſt of fruit is too ſmall. This is not owing to ignorance of more kinds, or even good kinds: I could have added a far greater number of very good fruits, of almoſt every kind that I have treated of; but the kinds which I have deſcribed, will, I hope, be thought ſufficient, when the reader conſiders that my plan was chiefly deſigned to offer ſome uſeful inſtructions to ſuch gentlemen as may chuſe to have a fruit-garden, in order to enable them to raiſe, plant, and manage their trees.

SECT.

SECT. XVIII. Some honeſt farmer may, perhaps, be puzzled to make a proper choice of the pears and apples that I have recommended in the preceding Treatiſe; and others, who have little time to ſpare, or no inclination to ſtudy fruits, may poſſibly wiſh for further information: and beſides, as every one prefers the beſt kinds of fruits, I ſhall, for the ſake of the indolent curious, take the trouble to make out a liſt of ſuch pears as appear to me to be the beſt for private uſe; and afterwards add a catalogue of ſuch kinds of pears as I have ſeen in Scotland, and are proper for being planted in orchards, &c. from each of which the planters may, at their leiſure hours, ſelect what kinds pleaſe them beſt

Good Pears, placed according to the Order of their ripening.

SUMMER.	AUTUMN.	WINTER.
Little Muſcat	French Cornuck	Swan's Egg
Crawford	Robine	Green Sugar
Jargonelle	French Bergamot	Brier Buſh
Summer Bergamot	Late Scots Cornuck	Achan
		Winter Thorn

SUMMER.	AUTUMN.	WINTER.
Scots Cornuck	Orange Bergamot	Ambrette
Lady's Thigh	Engliſh Bergamot	Chaſſery
Muſked Blan-	Dean Pear	Virgoleaſe
quette	Swiſs Bergamot	St. Germain.
Summer Good	Long green Pear	Round Win-
Chriſtian	Muſcat Fleury	ter
Muſcat Robert	Grey Good Wife	Colmar
Scots Bergamot	Muir-Fowl Egg	Saint Martial
Little Ruſſelet	Skinleſs Pear	Winter Good
Longoville	Beurre	Chriſtian.
Hanging Leaf.	Monſieur John	
	Creſſan	
	Marquis's Pear.	

The above kinds are all good pears, tho' ſome of them are preferable to others. I might have added more kinds, which I think good; but I leave to my reader the pleaſure of finding them out in the catalogue that is to be added; in which I have given many kinds of pears, under the names they commonly bear. I might have particularized the good kinds, and pointed out the bad; but as the judgment that is paſſed on the goodneſs of fruit, is only founded in opinion, I leave it to every gentleman to determine for himſelf.

ſelf. Some perſons only approve of ſweet fruit: others deſpiſe them, and prefer acidity to ſweetneſs. The flavour of muſk in pears delights many curious lovers of fruit, and diſguſts others. Soft and tender pears are ſought after by many, while the hard and breaking are preferred by ſeveral: yet it would not be difficult to point out particular pears of each kind that are generally agreeable. Muſcat Fleury's, Achans, Beurres, and Robines, may ſuffice for an inſtance. Such as are pleaſed with ſomewhat of ſourneſs in pears, may conſume the ſweet kinds before they come to perfect ripeneſs: and thoſe who prefer hard pears, may eat the buttery kinds while immature.

Muſkineſs in pears is, in the opinion of many, the higheſt and beſt reliſh. This, tho' different in ſeveral kinds, is agreeable to them in all. Perhaps it might, in ſome ſpecies, be called aromatic with more propriety: but I ceaſe to purſue this ſubject any farther at preſent. After I have carried on a careful examination of as many kinds of pears as I can come at in Scotland, I propoſe to give a figure and deſcription of every particular kind. Here

the reader will obſerve, that this undertaking can only be finiſhed in a number of years: the author, in the mean time, will think himſelf obliged to any gentleman, or gardener, who ſhall ſend him a few of any good kinds of pears that are not in the following catalogue. The proper time to ſend them, will be when they are nearly ripe; one of them being wrapt up in paper, with the name inſcribed, and the character of the tree added with regard to its growth and bearing, in the ſhape that it is trained, whether in the fruit-garden or orchard.

In Scotland, pear-trees generally thrive and bear well. We have many good kinds unknown to our neighbours, and even to our nurſery-men. What folly is it to continue to ſend to England or France for pear-trees, when our own kinds equal, if not excel, their choiceſt ones in goodneſs? I know that in oppoſition to the above, it is alledged by ſeveral of our planters, that our beſt fruits are only Engliſh and French kinds diſguiſed under Scots names. This is true, with regard to a few of them. I thought it more generally true, than I find it in experience; and if theſe gentlemen

men will make a careful ſcrutiny of the kinds, as I have done, and compare them with the fruit that are deſcribed in the Engliſh and French liſts of pears, they will be convinced that many of our pears are originally Scots kinds. This might be proved; but I forbear to give inſtances, and ſhall proceed to the Catalogue, where the kinds will be placed nearly in the order of their ripening.

A LIST of PEARS, the greater Part of which are placed exactly in the Order in which they ripened in the Year 1762.

Pear James
Crawford
Little Muſk Pear
Wine Pear
Forrow Cow
Lemon Pear
Piper
Prince's Pear
Large Blanquette
Buſh
Green Pear of Pinkey
Jargonelle
Red Admiral
Little Muſcat
Saffron
False Growth
Long-ſtalked Blanquette
Muſked Blanquette
Scots Cornuck
Cuiſſe Madame
Magdalene
Summer Bonchretien
Sauch
Hanging Leaf
Grey Cornuck
Muſcat Robert
Boufdon

Yellow

Yellow round Autumn Pear
Grey Honey
Golden Knap
Early Achan
Longoville
Little Ruſſelet
Scots Bergamot
Keather
Red round Autumn Pear
Watery Pear
Vinous Pear
French Cornuck
Chapman
Skinleſs Pear
Ruſſet Pear
Great Ruſſelet
Elſhin Haſt
Summer Bergamot
Roſe Pear
Orange Bergamot
French Bergamot
Late Scots Cornuck
Robine
Muſcat Fleury
Vicar
Dean Pear
Swiſs Bergamot
Engliſh Bergamot
Monſieur Jean
Verte Long
Muir-Fowl Egg
Grey Good Wife
Pound Pear
Creſſan
Beurre
Marquis
Swan's Egg
Achan
Brier Buſh
Ambrette
Chaſſery
Virgoleuſe
Saint Germain
Good Lewis
Spaniſh Bonchretien
Saint Andrew
Saint Auguſtin
Winter Citron
Winter Bergamot
Oblong round Winter Pear
Round Winter Pear
Green Sugar
Wardens
Colmar
Saint Martial
Winter Good Chriſtian
Round conical Pear

The above kinds of pears are ſufficient to ſatisfy thoſe who are fond of poſſeſſing great variety of pears, that all the kinds may be planted any where in Britain, if the ſoil is proper and the ſituation favourable; and where the trees grow with vigour and bear plentifully, there will be an ample annual produce ſufficient to entertain the planter and his friends for a great part of the year; and to enrich him, provided he plants the proper kinds in orchards, or in ſingle rows in fields: for many kinds of pear-trees, when allowed ſufficient room to extend their branches, become large, aſſume a regular conical ſhape, afford a beautiful proſpect when covered with flowers or fruit, and yield plenteous and profitable crops.

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THE GIFT OF

FRANCIS SKINNER
OF DEDHAM

IN MEMORY OF

FRANCIS SKINNER

(H. C. 1862)

Received December, 1912.